

K. 3
M E M O I R
OF A
CHART OF THE CHINA SEA;

INCLUDING THE
PHILIPPINE, MOLLUCCA, AND BANDA ISLANDS,

WITH PART OF
The Coast of New Holland and New Guinea.

DEDICATED, BY PERMISSION,
*To the Society of Managing Owners of the Ships in the East
India Company's Service.*

THE SECOND EDITION, CORRECTED.

BY
GEORGE ROBERTSON.

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INTRODUCTION.

AMONG the many and voluminous publications for perfecting the East India Navigation, there is not a General Chart of tolerable exactness to be found; and even those that do appear, are uniformly upon so small a scale as to be of little use to the mariner, from their perplexity and confusion.—The present Work, or Compilation, endeavours to obviate this deficiency; and it is attended with this additional advantage, that there is in no language another chart of these parts published since the introduction of that great improvement made in the art and practice of navigation, the Marine Chronometer, the only sure means of ascertaining meridian distance with facility, and that to a degree of precision (when common care has been taken in the observation) to answer every purpose required in the formation of a general chart.

The following Chart is almost entirely constructed from corresponding observations made with that invaluable machine, corroborated by the astronomical and lunar observations of many of the commanders and officers in the service of the Honourable East India Company; by whose obliging communication and assistance I have been enabled to submit to the Public a select series of information, compared with and collected from a variety of valuable original observations and journals, which otherwise would in all probability have remained generally unknown to the world.

No other merit is claimed from the present publication than what arises from a strict regard to truth; having throughout laid down no point till ascertained to the nearest truth by a careful and repeated comparison with different observations.

In places where there were not sufficient materials to direct, recourse has been had to Mr. Dalrymple's elegant collection of plans. D'Apres, Van Keulen, and other authors have also been studied and consulted for the more remote parts; which, however, are of little other use than to unite the whole series with the latest and best information.

The Chart now offered is a general one of that very useful part called **THE CHINA SEA**, including the Philippina, Mollucca, Banda, and all the other Eastern Islands, with part of New Guinea, and the West coast of New Holland.—It exhibits at one view all the outlets and straits, with original tracks through each of them, into the Pacific Ocean (or Great South Sea) commonly called the *Eastern Passage* to China; which has been of late years so much and so successfully frequented by the East India Company's ships; and that with very slender instruction, to the admiration of other nations, and to the honour and credit of the commanders in the English service, by whose ingenuity and perseverance the world is indebted for so useful a discovery.

One great advantage of this work is, that almost the whole of the frequented parts by the Company's ships was projected and laid down upon the spot; a material circumstance in chart-making; and which, in the course of four voyages in those seas, I have had an opportunity of doing, with every advantage which good instruments, stimulated by a strong passion for the employment, could furnish. I have therefore little doubt, but that upon the whole this performance will be found a good substitute for the want of so useful a survey. At least, it will distinctly
shew

shew the geography and general situation of that part of the globe, hitherto so much neglected by hydrographers; and on the accurate knowledge of which the safety of the East India Company's China ships so much depends, who in war, or from other unavoidable causes, are obliged to take that route.

Although unremitted care and attention has been used to avoid mistakes, yet in so complicated and extensive a field, some inaccuracies may have crept in; but at present I know of no error; and although I hope, if any have escaped my notice, they will not be found to be material; yet I am not superior to correction; and upon the smallest aberration being pointed out, I shall with the greatest pleasure set myself immediately to rectify it.

In the Memoir which follows, is given a Table of the Latitudes and Longitudes upon which the Chart is extended, with their authorities; and sundry other remarks and observations that will prove useful in explaining to the curious, or to those who will take the trouble to examine the foundation upon which the whole of this performance is constructed; for no chart ought to be permitted to be published without a reference to the materials which produced it, or upon which it rests.

I had proposed to publish the usual views of the particular headlands and islands contained in the Chart; but having already exceeded my limits, the additional expence of engraving deterred me; and they are for the present omitted.

the first of the series of experiments was made in 1871, and the results were published in 1872. The experiments were made with a view to determining the effect of the temperature of the water on the rate of the reaction.

The results of the experiments were as follows:—
1. The rate of the reaction increases with the temperature of the water.
2. The rate of the reaction is not affected by the concentration of the solution.

The following table gives the results of the experiments made with a view to determining the effect of the temperature of the water on the rate of the reaction.

The results of the experiments made with a view to determining the effect of the concentration of the solution on the rate of the reaction are as follows:—

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M E M O I R

O F

A CHART of the CHINESE SEA, &c. &c.

THIS Chart is Mercator's projection, upon the scale of one inch to an equatorial degree, extending to 23° north and 23° south latitude; and from longitude 102° to 137° east, from the Royal Observatory at Greenwich. The longitude is regulated upon the scale from our first meridian (Greenwich) in preference to any well-determined one upon the Chart; which last is sometimes adopted; but constantly causes trouble, and frequently mistakes, in calculating the difference of the two meridians. An hour-scale, divided to every five minutes of time, is added. The small dot under or near the figures which shew the *soundings*, is the *exact spot* on which the quantity of figures shew the depth of water, as determined from bearings and distance of the land; or measured by chronometer, when out of sight of it. Those figures which have no dot, are the intermediate soundings between the points so determined, and stand as near as possible over the depth they represent.

The China Sea is all over full of rocks and shoals, whose position is so ill determined, that the greatest care will ever be necessary in that navigation, especially when a ship deviates in the least from the common tract.—The chief intension of this Chart is to point out in a clear manner the true situation with respect to each other, of those shoals, landfalls, and dangers which immediately lie in the track of the Hon. East India Company's ships going to and from China by the usual, as well as eastern passage; at the same time

B

noticing

Of the
China Sea;

noticing every other danger as determined by the dead reckoning of those ships who discovered them. As professed navigators frequently differ in their observations, even although they are made at one and the same time, I here think it necessary to describe minutely those materials and observations which I have followed.

The longitude of Canton being the standard for the northern parts of the Chart, has caused me to be very particular in ascertaining its true situation; for on it depends the longitude of many other points in the China Sea, whose position is fixed by Arnold's chronometer, in short runs from it. If my longitude should be disputed, I have to observe, that the reciprocal points and adjacent parts upon the Chart are placed from *it* almost to an absolute certainty, so that the difference of meridians may be depended upon throughout: and I have no doubt, from the near agreements of the following observations, that the longitude adopted of Canton is nearer to the truth than what any single observation can disprove.

Of Canton.

From observations of the Hon. Thomas Howe, in 1759, Canton has been fixed in latitude $22^{\circ} 52' 10''$ N. and longitude $113^{\circ} 33'$ east from Greenwich. It will however appear an extraordinary circumstance in so professed an observer, to deviate so much as he has done from the truth, especially in point of latitude; for Captain Joseph Huddart makes it $23^{\circ} 6' 57''$, and Captain Lestock Wilson $23^{\circ} 6' 53''$ north. These two gentlemen, who are reputed good observers, agree with each other to a few seconds, and differ $14' 55''$ from Mr. Howe. And if in the latitude of the latter there is so great an error, there is reason to conclude that the longitude by the same observer cannot be exact. Mr. Howe's longitude, $113^{\circ} 33'$, was determined by the emerfion of Jupiter's first fatellite. Captain Huddart makes it by the same mode $113^{\circ} 16'$; and Henry Brown, Esqr. chief Supercargoe, by repeated observations during his residence at Canton, $113^{\circ} 10' E.$ —a difference in the mean of those two of 20 miles to the westward of Mr. Howe. Capt. Lestock Wilson, by a time-keeper made by Arnold, places it in $113^{\circ} 21'$ and $15''$; the mean of Huddart, Brown, and Wilson brings it to $113^{\circ} 15' 45'' E.$ and my adopted longitude of Canton rests upon the observations of Jupiter's fatellites $113^{\circ} 13' E.$ —Howe's instrument must have

have been defective; as will appear when we look to the deduced longitude of Maccoa from Canton, agreeing with sundry observations of sun, moon, and stars, as well as by runs from other points, well determined by time-keeper.

The longitude of Maccoa is deduced from Canton, by the repeated observations of three different gentlemens chronometers, as follows :

Henry Brown, Esqr. several times, mean	18'	W.	Difference of Meridian of Canton and Maccoa.
Capt. Lestock Wilson, outward	-	-	
Ditto home	-	-	
Capt. Jos. Huddart,	-	-	
		16'	
Mean	16' 45"		

The longitude therefore of Maccoa, either way, is between $113^{\circ} 28'$ by Brown, and $113^{\circ} 32'$ by Huddart. I have adopted the mean of the two, viz. $113^{\circ} 30'$ E. from Greenwich; a difference of $19' 45''$ to the westward of what it is usually reckoned.—In order to confirm this, Capt. William Frazer places it by nine sets of observations of the moon and stars, east and west of her, in the longitude $113^{\circ} 24'$: and by my own time-keeper from *Madras*, and likewise *Pulo Auro*, which seems to be a point positively determined from the near agreement of the following gentlemen, Captains Cook, Frazer, Huddart, Wilson, and Hodgson, who all place it between the longitude of $104^{\circ} 36'$ and $104^{\circ} 40'$. My chronometer having shewn it $104^{\circ} 36'$ from *Madras*, I have taken that longitude, which I consider to be as near the truth as any of the others; in a short run from it up to Maccoa, make $8^{\circ} 47'$ longitude, which places Maccoa by that means in $113^{\circ} 23'$ and $113^{\circ} 27'$; so that the whole accumulated error of the chronometer, in two months, was 7 miles of longitude, equal to $1' 45''$ of time; that is, judging Huddart and Brown's longitude of Maccoa to be exact, which indeed I have not the smallest doubt of.—The latitude of it by my own, corroborated with Captains Frazer's, Cumming's, &c. observations, is $22^{\circ} 12' N.$

The

Grand
Ladrone.

The longitude of the Grand Ladrone is likewise deduced from Canton, both by time-keeper and Mr. Dalrymple's projection; being 11' E. from Maccoa on his chart, and by Capt. Leftock Wilfon's chronometer, out and home, 28 and 29 miles E. of Canton—either way places it in 113° 41' E. of Greenwich, which is the longitude I have adopted.

The latitude of its southernmost part, from Capt. Frazer's observations, and my own, places it in 21° 57' N. Mr. Dalrymple places it, on his chart, in latitude 23° 2' N. and longitude 113° 56' E.—Capt. W. Frazer, by sun, moon, and stars, east and west, nine sets of observations, makes it 113° 33' 39", which convinces me the more that Mr. Howe's Longitude is by much too far easterly.—After these authorities and means used to obtain and confirm the true situation of Canton, there can be no doubt of the present point; the Grand Ladrone being placed *from it* to a great certainty, consequently in its true meridian from Greenwich.

Why the
Ladrone is
generally
taken at a
departure.

Ships sailing from China, with an intention of proceeding down the China Sea, make the Grand Ladrone the point from which they take their departure; and this for two reasons: First, Its being a well determined point; 2dly, Its being the place where most of the bearings and distances of the intermediate points throughout the China Sea are worked from. So that the most eligible method to follow, where a good chronometer is at hand, is to run the difference of meridian from point to point, and not to attend to the longitude from Greenwich; because here the truth of the situation rests upon the opinion of the point I have set out from (Canton) being exact; which, if admitted, the longitude from Greenwich answers, and will agree exactly with the several places; and their reciprocal position respecting each other, are marked upon the chart (I may venture to say) to an absolute truth. In leaving the Grand Ladrone, ships always endeavour to strike soundings on the Macclesfield Bank: sometimes they are disappointed; and when that has been the case, all the journals I have seen shew them to have passed to the eastward of it.

Reason of
Ships not
getting
Ground on
the Maccles-
field Bank.

Macclesfield
Bank.

From the Grand Ladrone, the easternmost part of the Macclesfield Bank bears S. by E; the depth of water upon that part of it is 40 and 45 fathoms; and

and very little to the eastward of these soundings, there is no ground; on other parts of the bank there is the same depth; the northernmost part appears to be the shoalest: I have been in 19 and 20 fathoms upon it; but by steering a little easterly, got very soon out of soundings. Mr. Dalrymple's chart, in nearly the same place, has 10 fathoms; a little more to the southward, where there is again 10 fathoms, the soundings are placed from the Horsendon's original journal; who at same time saw the coral rocks under her bottom; but by keeping to the eastward, presently got into deep water, and intirely out of sounding: which confirms the truth of these shoal spots being on the eastern edge of the bank. All the soundings marked on the eastern part of this shoal, are from actual soundings in ships in which I failed: the western parts are taken from Mr. Dalrymple's chart. It is not in my power at present to give the limits of the western edge of this bank with the same precision I have given the eastern part. Capt. William Frazer, in three days from the Ladrone, by chronometer, makes $1^{\circ} 8'$ longitude to soundings in latitude $15^{\circ} 42'$, his situation then very near the east edge of the bank. I have failed east from off the N. E. part of it; then steered up to the Ladrone; and I make the same difference of longitude Capt. Frazer did, to a mile or two; the longitude of the eastern limits, therefore, is in $114^{\circ} 51'$ E. of Greenwich; and the greatest extent north and south, seems by Mr. Dalrymple's account of the Fort St. David's country ship, in the year 1752. Her first soundings were in latitude $15^{\circ} 17'$; the last in $16^{\circ} 10'$ N.

The course, in order to strike soundings on the Macclesfield, ought to be regulated according to the winds and weather.—In failing out of Maccoa Roads with a strong gale hanging far to the eastward, it will require a S. S. E. course; if it overblows, this will cause a high disagreeable chopping sea; then a still more easterly course will be necessary. But in general, with pleasant weather and the wind at N. E. a S. by E. $\frac{1}{2}$ E. course will keep the ship in the true direction: if it should however be found, by time-keeper or other means, that this course leads beyond one degree or $1^{\circ} 5'$ E. of the Ladrone, it will then be necessary to bear up more to the south; as by exceeding that longitude from the Ladrone, hitting it would be uncertain.—As the shoal spots of 10 fathoms upon this Bank

What Course
necessary to
strike sound-
ings on the
Macclesfield.

seem to be a little within the eastern edge of it from all those ships who had the above-mentioned soundings, getting soon off it by keeping to the eastward, it may not be amiss to hint, in case of a ship's meeting with these soundings, that it is more than probable she is on the eastern part of the shoal; for there appears no such depth on the western part. The 14 fathoms placed upon that side strikes me as the spot of shoal water on which the Horsendon had 10 fathoms, being much in the same latitude; the Horsendon proved her situation to be the eastern part, by standing to the eastward and getting immediately off it. I am ignorant whether the ship from which Mr. Dalrymple placed these soundings acted so or not, therefore all is conjecture respecting them; there may be shoal water on the western part; but one general rule ought to be always observed in case of meeting with it; which is, to haul immediately to the eastward until you deepen.

Pulo Sapata.

Ships bound to, or coming from China or Manilla, by the usual track, always endeavour to make Pulo Sapata; from the eastern part of the Macclesfield Bank (or nearly so) a S. W. $\frac{1}{2}$ S. course will bring a ship to pass the island at the distance of 4 or 5 leagues; in clear weather it may be seen 10 or 11 leagues from the quarter deck of an Indiaman; it varies its appearances according to the different bearings; when it bears N. it is extremely curious, and looks as if it were going to fall to the right; both sides in that point of view stand a great way off their center. The ship Essex, Capt. Jackson, in 1755, coming from China passed breakers bearing N. W. from Pulo Sapata and E. N. E. from the large Catwick; she only weathered them about 200 yards, but could not the island of Sapata, which she passed to the westward, between it and the catwicks, and saw no other danger. I have placed that rock upon the Chart from the above bearings.

The latitude of Pulo Sapata I make by satisfactory observations to be $10^{\circ} 01' 30''$ N. and its longitude $108^{\circ} 55'$ E. from Greenwich; obtained by the following observations from Arnold's chronometer:

Capt.

(7)

Capt. Cook, from Maccoa to Sapata X. L.	4° 27'	W.
Capt. Lestock Wilfon	- - - - 4° 30' 45"	
Geo. Robertson	- - - - 4° 39'	

Mean	4° 32' 15"
Longitude of Maccoa	113° 30'

Leaves the longitude of Sapata 108° 57' 45" E. from Greenwich.

But by admitting Pulo Auro's extreme eastern longitude 104° 40' from it up to Pulo Sapata, the meridians distance is 4° 14' measured by a well-regulated box chronometer, made by Arnold, having this advantage of the islands bearing due north, when the altitudes for time were made so, that no error could arise in the estimation of distance; which is more frequently the cause of difference in observation, than any error in the observations themselves. As I have often seen a deviation from the truth, in point of judgment of the supposed distance, amount to 10 and 15 miles, so that without the observations of those gentlemen who judge Sapata's longitude to be above 109° were made when on its meridian, it is impossible to agreewith them; the small difference that arises, I am sure, proceeds from that cause; it is therefore placed on the Chart, as it appeared to me to be the most satisfactory respecting its reciprocal situation from the Auro Islands and others immediately near it, this being of more consequence than its true longitude from Greenwich; the longitude, however, which I have adopted differs from none more than 10 or 11 miles; these facts and observations I nevertheless submit to nautical men. The longitude of Sapata is 105° 55' E. from Greenwich, 4° 14' E. of Pulo Auro; Capt. Cook's voyage makes Pulo Condore to be 106° 18' E. the meridian distance from it to Sapata, by Mr. Bayley's chronometer, is 2° 32'; by Capt. Hodgson, of the Cornwallis, 2° 39': mean 2° 35' added to Condore's longitude, 106 18', gives 108° 53' for the longitude of Sapata; so that I think there is little doubt of its true longitude being somewhere within 108° 53' and 109° E. from Greenwich.

There

Soundings off
Sapata.

There are no soundings to the northward or to the eastward of Sapata: the bank commences from the south part of the island with very deep water, gradually shoaling to the southward and westward.

Pulo Sapata bearing	N. by E.	4	leagues	80	fathoms,	ouze
	N. by E.	7 or 8	ditto	85	—	mud & sand
	N. by E $\frac{1}{2}$ E	7	miles	75	—	ouze
	N. by E $\frac{3}{4}$ E	5	leagues	70	—	ouze & wh. sand
	N. by E $\frac{1}{2}$ E	9	ditto	72	—	ouze
	N. N. E.	8 or 9	ditto	78	—	ditto
	N. E.	9	ditto	69	—	mud & sand
	N. E $\frac{1}{2}$ E.	8 or 9	ditto	42	—	course gr. ditto
	N. E. by E.	10	ditto	52	—	fine br. ditto
	E. N. E.	8	ditto	46	—	fine gr. ditto

The water gradually shoals from these soundings in sight of Sapata, as you approach to Pulo Condore and the Auro Islands, with such uniform exactness that, if the latitude is nearly known, a very good judgment could be formed of the situation from the depth of water. The soundings upon the Chart from Sapata to the equator are ascertained by time-keeper, and may be trusted with a great degree of confidence.—The General Coote's track, out and home, in 1788 and 89, I laid down upon the spot by chronometer's longitude taken every three or four hours. The depth in the intermediate space between the two tracts, where there are no soundings expressed, runs in a gradual proportion from one to the other, and may be judged of according to the tract to which they come nearest.

Pulo Con-
dore, lat. and
long.

Pulo Condore is high broken land, appearing at a distance in a number of hummocks; and may be seen in clear weather 15 or 16 leagues. The latitude of the Old English Factory is 8° 40' north; and by the chronometers in the Resolution, Capts. Cook and King, it lies in longitude 106° 18' E. of Greenwich, 1° 42' E. of Pulo Auro, 2° 4' E. of Timoan, and 2° 5' W. from Sapata. The soundings off this island in its parallel of latitude are so certain a criterion to judge of the distance from it, that

that the old and usual plan of ships making that island is only lengthening the distance, and answers no purpose: for any way between the latitude of $8^{\circ} 38'$ and $8^{\circ} 40'$, the following account may be depended upon:

Pulo Condore bear:	West	10 or 11 leag.	22 fath.	ground
	West	12	ditto 24	— ditto
	W. by S.	22	ditto 30	— fine gray sand
	W. by $S\frac{1}{2}S$	25 to 26	ditto 37	— fine dark sand
	W. by $S\frac{1}{2}S$	30 to 31	ditto 42	— ditto
	W. by S.	40 to 42	ditto 48 and	53 fath.

Beyond that depth the Bank goes off instantly to deep water, or no soundings; so that by trying the depth when passing the latitude of this island, the proper course can be shaped to Pulo Sapata, or the Auro islands, with as much certainty as if they had been seen.

Pulo Auro, the easternmost of that group of islands, is very high land forming two hills, which lie in the direction of N. W. and S. E. from each other, the highest to the eastward. From the near agreement of many different chronometers and lunar observations, it appears to be one of the best determined points throughout those seas.—Its latitude is between $2^{\circ} 29'$ and $2^{\circ} 30'$ N. and longitude $104^{\circ} 38'$, as deduced from the following observations:

Auro Islands:

Lat. and
Long. of
Auro.

Mr. Wm. Brown, 1767, sun and moon, mean of
3 obs. long.

$104^{\circ} 35'$ E. of Gr.

Capt. J. Huddart, by chronometer,

$104^{\circ} 40'$

Capt. James Cook, ditto,

$104^{\circ} 37'$

Capt. Lestock Wilson, Carnatic, ditto,

$104^{\circ} 40'$

Ditto, from Batavia, ditto,

$104^{\circ} 40'$

Geo. Robertson, from Madras, by box-chronometer

$104^{\circ} 36'$

The soundings off Auro, as well as those to the northward of Pulo Timoan, are expressed on the chart by accurate cross-bearings. There is a bay on the S. W. part of the island, which affords good water and wood,

D

and

and is perfectly safe in the N. E. Monsoon; the west side of the island must be passed, in order to gain the bay.

Pulo Timoan Pulo Timoan is the northernmost and largest island;—the north part of it lies in latitude $3^{\circ} 0' N.$ and longitude $104^{\circ} 16' E.$ of Greenwich. It is very high land, and may be seen 20 or 21 leagues. I have seen it very plain bearing due south 19 leagues. Pulo Pisang, Pulo Tingey, and the rest of these islands, are placed as they bear from each other.

Pedro Blanco.

Pedro Blanco, or White Rock, lies in the mouth of the Straits of Malacca, in latitude $1^{\circ} 20' N.$; longitude, by Arnold's box-chronometer, $2^{\circ} 13' E.$ of Malacca; $104^{\circ} 22' 52'' E.$ from Greenwich, and 14 miles west of Pulo Auro. There is no passage to the southward of it. Bintang Hill is in one with it, S. by $\frac{1}{4}E.$ distance about 5 leagues. The eastern part of the Romania Reef runs from Pedro Blanco N. E. by N. Bintang Hill bearing S. by W. $\frac{1}{2}W.$ is the leading mark to clear the Reef:—a N. N. E. course from these bearings will bring a ship in mid-channel between the Auro and Anamba Islands; and, from that situation, continuing on a N. N. E. course, will carry you 31 leagues to the eastward of Condore, in 42 or 43 fathoms, fine dark sand, and will bring you up in sight of Sapata; which will bear N. by E. when 6 leagues off it.

Pulo Domar. Pulo Domar is placed on the Chart, from its cross bearings with respect to the Auro Islands, taken in the General Coote.—The width of the channel between it and Pulo Auro is about 20 leagues.

Great Anamba.

The Great Anamba and islands surrounding it, are in their true latitude, from satisfactory observations in the General Coote. The two northern islands are likewise placed from that ship's latitude and bearings in a former voyage. The soundings in the channel between the Anamba and Auro Islands, are so much alike in point of depth and quality of ground, that they can never be a sure guide to judge by, in thick weather, on which side of it you are.

The

The Middleburg shoal was seen by the General Coote, Capt. Baldwin, going to China, in the year 1786. I have placed it from that ship's account, which must appear satisfactory; for the ship, General Coote, was at noon in the latitude of Pulo Condore $8^{\circ} 40'$, soundings 53 fathoms; which in that latitude is the extreme edge of the bank. Steered north-east at the rate of 6 miles per hour, and at 6 P. M. saw the shoal, which the sea roll'd over, none of it appeared above water, she immediately hauled to the northward.* I have inserted her track on the Chart till she passed Sapata, which island she did not see. M. de la Placeliere, in the ship Le Paix, returning from China saw it; his account of the shoal agrees very nearly in latitude, being only 4 miles more southerly than Capt. Baldwin places it; however, they disagree nearly 20 miles in its situation otherwise; Capt. Baldwin makes it in the meridian of Pulo Sapata; and the Frenchman places it 20 miles to the eastward of that island.

Middleburg
Shoal.

Andrade Rock is a small rock just above water, seen by the Essex and Falmouth, returning from China, in 1760. All the charts I have seen, place it in latitude $9^{\circ} 54'$, and 19 leagues to the eastward of Pulo Sapata.

Andrade
Rock.

The two small islands to the northward of Pulo Sapata, are placed from the observations of Capt. Vincent Williams and Mr. Horsley, from Mr. Dalrymple's memorandum.

Brothers
near Sapata.

The Grand Lema is the easternmost and largest of the group of islands of that name, and is pretty high land; its north part is in latitude $22^{\circ} 2'$ N. 33 miles, by Mr. Dalrymple's projection, to eastward of the Grand Ladrone, or $114^{\circ} 14'$ E. of Greenwich. *Ships that are late in the season* coming by eastern passage, or the eastern part of the China Seas, always endeavour to come in by that way: the small island of Pootoa forms the north side of the passage, and lies 8 miles to the northward of it; there are but few dangers amongst these islands; Mr. Dalrymple's chart of them is very accurate, except his latitude, which is too much northerly.

Grand Lema

Pedro

Pedro Blanco,
Coast of
China.

Pedro Blanco is a small steep white rock; from good observation, its latitude is $22^{\circ} 20'$ N. 18 leagues east of the Grand Lema; its longitude from Greenwich $115^{\circ} 8'$ deduced from Maccoa, and confirmed by nine sets of lunar observations, objects east and west of it, made by Capt. W. Frazer, whose mean of the whole places it in $115^{\circ} 4'$ E. I have adopted that which was deduced from Maccoa, the soundings in the Chart, to the eastward of it, is inserted from the journals of the Vanfittart and Earl of Mansfield, the former of which I was on board.

St. Esprit
Shoal.

I have followed Mr. Dalrymple, in his account of this shoal, and have placed it on the Chart accordingly; it was seen by the Affeviedo, M. Simon Boutet, coming from Maccoa; likewise by Capt. Saunders, of the Grosvenor, and C. le Lond, in a French Indiaman, who all agree in the latitude; the two former also agree in its situation from Maccoa.

Scarborough
Shoal.

The Scarborough shoal is placed from the Spanish account, in the ship Affeviedo; from the shoal to the Grand Ladrone, she was only seven days: the Royal Captain, from China, in the voyage she was lost, saw it, and confirms it to be nearly as the Spaniards make it.

Earl Lincoln
Shoal.

The ship Earl of Lincoln, in 1764, made a shoal which she supposed the Triangles; her latitude agrees exactly with the Swedish ship's account, who struck and stuck fast upon it for a considerable time.

Swedish Ac-
count of the
Lincoln
Shoal.

Having, for several days past, found by our observed latitude at noon, the ship set from 10 to 16 and 20 miles to the northward of our account, we supposed ourselves likewise to have been set to the eastward.

The 14th November, at noon, our observed latitude was $15^{\circ} 20'$ N. and meridian distance $4^{\circ} 48'$ E. from Pulo Sapata the same day. On the 15th, per log, at 6 P. M. in latitude $15^{\circ} 46'$ N. hove to, and sounded with 90 fathom line, but found no ground; which made us believe we were to the eastward of the Macclesfield Bank. Continued standing N. by W. and N. $\frac{1}{2}$ W. close hauled under double reefed topsails, the wind N. E. by E. at the rate of 5 and $5\frac{1}{2}$ English miles per hour, till half past 3 A. M. being

being then in the latitude $16^{\circ} 29'$ N. and computed meridian distance from Pulo Sapata $4^{\circ} 24'$ E. when the ship unfortunately run aground on the lee side of a low sand-bank. Back'd off all immediately, and let out the second reefs of the topsails, when she began to strike very hard on the larboard side, as she roll'd over towards the sand side; started some of our water, and got the pinnance out to sound; but at the same time the ship's head payed off, filled the sails, and got her off at half past 4 A. M. without making any water, or having received any other damage than breaking the tiller close to the rudder-head: bore away westerly till day-light, at 6 o'clock, when a small pointed rock, 5 or 6 fathoms high, was seen S by E.; luffed up close by the wind, to N. by W. $\frac{1}{2}$ W. going at the rate of 6 miles per hour, till 9 A. M. when we saw a low sandy isle in the west, and a sand-bank stretching a-head as far as N. W. by N. Put about, and stood S. E. by E. 4 miles; the bank out of sight; put about again, at 10 A. M. and laid N. by W. 11 miles till noon; saw the low island in the south-west, and the before-mentioned sand-banks W. by N. 3 English miles distance, with another small sand-bank, bearing W. N. W. sounded several times in the forenoon, but got no ground with 60 and 70 fathoms of line. Our observed latitude, at noon, was $17^{\circ} 1'$ N. and meridian distance $4^{\circ} 10'$ E. of Pulo Sapata. In the afternoon of the 16th, stood N. by W. $\frac{1}{2}$ W. 11 miles, till half past 2 P. M. when we had the last sight of the northernmost sand, bearing S. W. distance 7 English miles from us, whereupon we took our departure, and made $1^{\circ} 51'$ meridian distance, $1^{\circ} 57'$ X longitude to the island Tinhoza on the coast of Haynan, whose latitude is $18^{\circ} 46'$ N.; found the current to set very strong to the south-west for these two days past: for this reason, we run in under the land, and came to an anchor the 18th of November, at noon, in 17 fathoms water.

This account I received from my friend, Mr. Nelson, who was chief officer of the ship; and is the mean account of the captain and officers on board; who are, in that service, very exact in point of reckoning. It appears to me to be extremely correct, from its near agreement with the following points which, at first, I did not advert to, the Chart being constructed before I got the information. I set out with placing it by their

E

account

account from Sapata. Upon examining to see how it stood with respect to other points, I was highly pleased to find it correspond; for in two days run to Tinhoza, upon the coast of Haynan, in latitude $18^{\circ} 43' N.$ no great error could arise, it agrees to a mile or two; it likewise places it at the same distance from the western part of the Macclesfield Bank, on this Chart, as Mr. Dalrymple has done on his; it also agrees within 30 miles of the Earl of Lincoln's account to Luconia, who made $6^{\circ} 30'$ east to the land in latitude $17^{\circ} 30' N.$; all of which confirms me in the opinion, that the shoals are now placed very nearly in their true position.

Triangles and
Amphitrite
Shoals.

I am not so certain of the triangles or Amphitrite Shoals: the south-east breakers were seen in the ship Admiral Pocock, in 1764, and likewise by the Amphitrite French frigate. All the space between the west part of the Macclesfield Bank and the Paracels, is a continued chain of rocks and sands, with deep water between them—so says an experienced Portuguese pilot of Maccoa.

The Paracel
Bank.

The southern part and islands of the Paracel Bank, I have laid down agreeably to their position from Pulo Sapata; I have followed its shape to the northward, as it has uniformly appeared in every chart I ever saw.

Island of
Haynan.

The south-east coast of Haynan is laid down partly from the Swedish account of Gustaff Ekeberg, and partly from Van-Keulen; the west and north-west parts, with the coast, islands, and soundings in the Bay of Tonquin, are entirely from the latter.

Cochin
China.

I have principally followed M. D'Apres de Manneville in the outline of the coast of Cochin China, from Cape Nord to the Rivers of Cambodia, except a few alterations in latitude, which I made from the Louisa's journal. The longitude of the whole coast rests on its reciprocal distance from Pulo Sapata; and is brought farther to the eastward on the Chart, in proportion to the error of Pulo Sapata's former longitude, which was on all charts very considerably too far westerly. The coast and islands in the Gulph of Siam, with the Malley Coast, Rideang, and other islands, lying off it, are likewise from D'Apres's last edition.

These

These are the shoals lying off the Coast of Luconia. I have placed them on the Chart, from the only authorities to be obtained; how far they are good, I cannot determine, as none of our India ships, in sailing up that passage, ever fell in with them. Mr. Dalrymple, in a printed memorandum, says that M. Allegre, a Frenchman, assured him, he had seen the two northern shoals which lie N. N. W. and S. S. E. from each other; and that the southernmost of the two was not above 12 or 14 leagues from the coast. I have adopted the above account for their situation. On my last voyage, in the General Coote, we went up that coast; but saw nothing of them.

Bolinao and
Marfingola
Shoals.

The southernmost of these shoals is named Mirabella, after the north point which forms the Great Bay of Manilla; it is placed from Mr. Dalrymple's chart, which I have followed, latitude $14^{\circ} 24'$ N. and 36 miles to the westward of Cabra, or Goat Island.

Mirabella.

In order to describe and point out the relative situation of the Praters Shoal and Coast of Luconia, I think it here necessary to insert the General Coote's journal from Pulo Sapata to Maccoa, in October, 1788; as it will fully explain the occurrences and observations which came within my own knowledge; and, at the same time, will shew the most eligible track to take at that time of the year, with the great risque there is of falling to leeward, after leaving Luconia for the coast of China.

Ship

Ship GENERAL COOTE, from SAPATA towards CHINA.

H.	Courses.	K.	F.	Winds, &c.	Thursday, Oct. 2, 1788.
1	N. E.	6	0	W. by N. fair	At 2 h. 32' 15" long. E. Gr.
2		5	4		by chron. 109° 11' 15"
3		5	0	Pulo Sapata W.	Sapata S. 88 W.
4		4	0	Do. S. 88 W. 8 or 9 leagues	6 or 7 leag. 0° 19' 0"
5		3	0		
6		2	3	} Light variable airs, and dark cloudy weather.	Long. of Pulo Sap. 108° 52' 15"
7		1	2		
8		1	3		
9		1	5		
10		2	0	} Much lightning all round, and heavy rain.	At 4 h. 32' 1" long.
11		2	5		by chron. 109° 17"
12		2	5		Sapata S. 85 W. 8 or 9
1		2	0		leag. 0° 25'
2		3	2	W. N. W. ditto	Leaves long. of Sapata 108° 52"
3		4	5		
4		4	5	Hard squalls and rain	
5	N. N. E.	5	5	{ W. by N. very hard, squally, and heavy rain	
6	N. E.	5	0	{ Split jib & fore-topfail, hand- ed, mizen-topfail in first reef.	
7		4	0	{ W. N. W. unbent jib, and set mizen-topfail	
8		3	5	N. N. W. dark and cloudy	
9		3	5	W.	
10		5	0	{ Shifted fore-topfail with best, and jib with second-best.	Long. at noon, chro. 110° 07' Do. from Pulo Auro 105° 31'
11		6	0		
12		6	0		

Distance 91 miles.

Course with bear. at ½ past 4 P. M.	Dif.	N.	E.	M. D.	Lat. A.	X Lo.	Long.	by Log.
N. 45 E.	69'	49'	49'	1° 20' E.	10° 53'	1° 50'	1° 21' E. Sap.	110° 16' E. Gr.

The first and latter parts, a fresh breeze; the middle, light airs, variable, with much lightning and heavy rain; the weather throughout dark and cloudy, with a long hollow swell from the northward. There has been about the ship for some days past, an immense number of land-birds of various sorts, many of which we caught

Lat. obs. 10° 44' N.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses	K. F.	Winds, &c.	Friday, Oct. 3, 1788.
1	N. E.	5 2	W. cloudy	
2		5 0		
3		4 4		
4		4 3		
5		4 4		
6		5 0	S. W. by W.	
7		5 0		
8		5 2	S. W. hazy all round	Take departure from the chro-
9		4 5		nometer longitude, allow-
10		5 3	In 1st. reef F. T. S.	ing P. Sapata to be in
11		5 4	S. equally	Lat. 10° 01' 30" N.
12		6 5		Long. 108° 55' 00" E. Gr.
1	N. E. by E.	6 2	S. S. W.	
2		6 2		
3		6 2		
4		6 0		
5		6 3	S. by W.	
6		6 4		
7		6 5		
8		6 5		
9		6 3		
10		6 3	S.	Long. by chron. from yester-
11		6 4		day 111° 57' E. at noon.
12		6 4		

Distance 140 miles.

Course.	Dif.	N.	E.	M. D.	Lat. A.	XLo.	Long. by Log.
N. 51 E.	140'	87'	108'	3° 8' E.	12° 11'	110'	3° 11' E. Sap. 112° 6' E.

Throughout, a fine fresh gale, and the weather more settled, with a good appearance of a continuation of the southerly wind; the swell from the northward much fallen. At midnight hauled more to the eastward.

Lat. obs. 12° 15' N.

F

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Saturday, Oct. 4, 1788.
1	N. E. by E.	7 0	S. fresh breeze	
2		6 5		
3		6 5		
4		6 5		
5		6 2	S. S. E. cloudy	
6		6 3		
7	E. N. E.	6 2		
8		6 3		
9		6 4	Fair	
10		6 3		
11		6 4	S. W. by S.	
12		6 0		
1		6 0	Variable and cloudy, with showers.	
2		6 0		
3		5 5		
4		5 3		
5		5 0	S.	
6		4 3		
7		4 4		
8		4 5		
9		4 5		
10		4 2		
11		4 0		
12		4 0		

Long. at noon from last
fight by chron. 114° 3' E.

Distance 137 miles.

Course.	Dif.	N.	E.	M. D.	Lat. p.	XLo.	Long. by Log.
N. 64 E.	137'	60'	123'	5° 11'	13° 15' N	126	5° 17' E. Sap. 114° 12' E.

For the most part a pleasant gale; the weather settled, but cloudy; which prevents the observations for chronometer.

Lat. obs. 13° 20' N.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K.	F.	Winds, &c.	Sunday, Oct. 5, 1788.
1	E. N. E.	3	4	S. by E. fair	
2		3	4		
3		3	2		
4		3	0		
5		2	2		
6		2	0		
7		1	0	Light airs	
8		1	0	S. E. by S. ditto	
9		0	5		
10		0	0	} Calm	
11		0	0		
12		1	0	Light airs. S. E.	
1		1	0		
2		1	0		
3		1	0		
4		1	0		
5		1	4		
6		1	5	{ Variable, out F. T. S.	
7		2	2		
8		2	4		
9		2	3		
10		2	3	N. N. W.	Long. from last obs.
11		2	4		by chron
12		2	2		114° 44' E. Gr.

Distance 43 miles.

Course.	Dif.	N.	E.	M. D.	Lat. A.	XLo.	Long. by Log.
N. 68 E.	43'	17'	14'	5° 51'	13° 37' N.	41'	5° 57' E. Sap. 114° 53' E.

Light airs and calms, with hazy weather, which prevents observations for time.

Lat. obs. 13° 27' N.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Monday, Oct. 6, 1788.
1	E. N. E.	2 5	W. N. W. light airs	
2		3 4		
3		4 2		
4		4 5		
5		4 5		
6		4 5	{ N. N. W. squally & rain, in 1st reef	
7		3 0		
8	E. by N.	3 2	{ N. by E. squally & rain.	
9		4 0		
10		4 2		
11		4 2	N.	At 20 h. 9' 4"
12		4 2		lon. by chro. 116° 0' 45" E.
1		4 3		
2	E. N. E.	4 4		
3		4 3		
4		4 3		
5		4 2		
6	E. by N. $\frac{1}{2}$ N.	4 0		
7		4 2		
8		4 0		
9	E. by N.	3 5	N. by E.	
10		4 0		Long. at noon,
11	E. by N. $\frac{1}{2}$ N.	4 0		by chron. 116° 16' E. Gr.
12		4 0		

Distance 98 miles.

Courfe.	Dif.	N.	E.	M.D.	Lat. A.	XLo.	Long.	by Log.
N. 79 E.	97'	18'	95'	7° 26'	13° 45' N.	98'	7° 35' E. Sap.	116° 30' E. Gr.

In a squall, at 6 P. M. the wind shifted to the northward; where it continued the remainder of the twenty-four hours very steady.

Lat. obs. 13° 42' N.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K.	F.	Winds, &c.	Tuesday, Oct. 7, 1788.
1	E. N. E. $\frac{1}{2}$ N.	4	2	N. by W. hazy	
2		4	0		
3		4	0		
4		4	2		
5		4	3		
6		4	3		
7	E. N. E.	4	2	N.	At 2 h. 51' 32" E. Gr.
8		4	2		long. by chron. 116° 29' 30"
9	N. E. by E	4	3	N. by W.	
10		4	2	Cloudy	
11		4	2	Lightning all round	
12	E. N. E.	4	0		
1		4	0	{ Very dark and clo. with much thun. lightn. and rain.	
2		3	5		
3		1	5		
4		1	5	{ Var. fq. and hard rain, taken a-back	
5	N. N. E.	1	4	{ Variable, lightn. exceeding sharp.	
6		1	2		
7	E. N. E.	5	4	S. S. W.	
8		5	5	W. S. W.	Long. at noon
9		3	2		by chron. 118° 05' E. Gr.
	E.	3	0		9° 15' E. Sap.
10		6	2	S. S. W.	
11		6	2		
12		6	0		

Distance 101 miles.

Course.	Dif.	N.	E.	M. D.	Lat. A.	XL.	Long.	by Log.
N. 76 E.	100'	24'	97'	9° 3' E.	14° 6' N	100'	9° 15' E. Sap.	118° 10' E. Gr.

The first part of these twenty-four hours the weather looked settled, with a pleasant breeze; about midnight it overcast, and became remarkably dark, attended with a great deal of lightning and thunder, and much heavy rain: in the morning, the wind came round to the S. W. which brought fair weather.

Lat. obs. 14° 9' N.

G

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Wednesday, Oct. 8, 1788.
1	E.	6 3	S. fair	
2		6 4		
3		6 4		At 3 h. 3' 48"
4		6 4	Cloudy	chro. long. 118° 25' E. Gr.
5	E N. E	6 2		At 4 h. 25' 42"
6		6 2		ditto 118° 27' 45"
7		6 0	Squally and rain	
8		6 0	Squally and rain, very dark & cloudy —lightning to the eastward over the land	
9		6 3		
10		6 4		
11		7 0		
12		7 0		
1	N. E	6 2		
2		6 0	Squally and rain	
3		6 0	Ditto	
4		6 0	Ditto	
5		6 0		
6		5 5		
7	N. by E.	4 0	{ Saw the coast of Lu- conia, bear. from E. N. E. to E. S. E. 10 leag.	
8	N.	4 0		
9		4 4		
10		4 4		
11		4 4		
12		4 0		

Distance 140 miles.

Course with bear. at 6 P.M.	Dif.	N.	E.	M. D.	Lat. A.	XLo.	Long.	by Log.
N. 77 E.	126'	28'	123'	11° 6'	14° 38' N.	127'	11° 22' E. Sap.	120° 17'
E. Gr. home to Point Capone.								

A steady strong gale, with frequent squalls and showers. At 5, P. M. being by chronometer near the Mirabella Shoal, hauled two points to the northward, in order to pass it on that side. At midnight, steered N. E. being then close up to the Shoal by

by chronometer; kept a strict look out, but saw no danger. If it lies where it is placed in Mr. Dalrymple's chart, I judge we must have passed very close to it, from our situation in the morning, when we saw the coast of Luconia. At 7, A. M. the southern extremes, or Point Capone, bore S. 56° E. 10 leagues; at same time shutting in with it the south-western point of Subec Bay.—From Capone northward, there appears another termination, or point; between which and Capone the land is remarkably high, and makes, in appearance, like a saddle; which may be seen, in clear weather, 26 or 28 leagues. To the northward of that point the land trenches away, and forms a deep bay, on the north-west part of which there is a prodigious mountain, the highest I almost ever saw. I am certain, in clear weather it may be seen 30 leagues. It bore at this time N. 58° E.; and the point which is to northward of Capone, and makes the Saddle, S. 76° E.; distance off the nearest shore 8 or 9 leagues. The coast hereabouts is steep too, and bold, with much of what is called gulph-weed about. At noon, the extreme of the coast of Luconia from Point Capone (which, when to the northward of it, appears like an island) bore S. 35° E. to N. 40° E.; the peak of the high mountain S. 79° E.; distance off shore 7 or 8 leagues. There are two or three small islands lying off Capone Point, distant from it about 4 miles; between them and the coast there are soundings 40 and 35 fathoms. There is likewise soundings all along from Mirabella Island to the northward of capone, when within two or three leagues of the shore.

The coast of Luconia, from Point Capone to Cape Bolinao, lies nearly upon a meridian; the land gradually gets lower from the remarkable mountain to Cape Bolinao, which is of moderate height. To the southward of it, close in shore, there are several small islands; and to the northward of it, the land trenches to the eastward, forming a deep bay, in the bottom of which there appears again a very high hill, which may be seen at a great distance. The coast of Luconia, to the northward of Cape Bolinao, is laid down on the Chart from the Louisa's journal and remarks.

Longitude of Point Capone, by chron.	—	—	—	120° 13' 40" E. Gr.
Longitude from Sapata	—	—	—	11° 18' 40" E.
Long. by run from Sapata	—	—	—	120° 17'
X Long. by run from Sapata	—	—	—	11° 23'
Lat. by indifferent obs.	15° 27' N.			

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Thursday, Oct. 9, 1788.
1	N.	4 5	S. fair	At 2 h. 1' 30" long
2		4 5		by chron. $119^{\circ} 43' E. Gr$
3		4 2		Dist. off nearest
4		4 2		shore, 7 or 8 leag. <u>24'</u>
5		4 3		
6		4 0	S. S. E.	In lat. $15^{\circ} 36'$ the
7		4 0		land is $120^{\circ} 07'$
8		4 0		
9		3 5		
10		3 3	Variable	
11		3 4	E. N. E.	
12		3 4		
1		3 2		Take departure from Cape Bolinao,
2		3 0		allow, its long. $120^{\circ} 12' E. Gr$
3		2 2		
4		2 4		
5		2 0		
6		1 4	Light airs	
7	N. by E.	1 6	E.	At noon, long. by
8	N.	2 0		chron. $119^{\circ} 46' E. Gr.$
9	N. N. W.	2 4	N. E.	
10	N. W.	2 2	N. N. E.	
11	N. W. by W.	2 4	N. by E. tacked	
12	E. N. E. $\frac{1}{2}$ N.	2 2	N. by W.	

Distance 80 miles.

Long.
 128° W. of Bolinao.

A pleasant little breeze, veering gradually from the south to the east, and then round to the north; weather fair, and smooth water

At sun-set, the northern extremes of Luconia, which is Cape Bolinao, bore N. $41^{\circ} E.$; the southern extremes, S. $33^{\circ} E.$; the high mountain, S. $45^{\circ} E.$: distance off shore 7 or 8 leag.

Lat. obs. $17^{\circ} N.$

At noon, all the land obscured by the clouds: distance from it 16 or 17 leagues.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Friday, Oct. 10, 1788.
1	N. E. $\frac{1}{2}$ N.	3 0	N. W. by N. fair	
2		3 4		
3		3 5		
4		3 5		
5	N. E. $\frac{1}{2}$ E.	3 0	N. N. W.	At 4 h. 32' 5" long by chro. 119° 25' E. Gr.
6		2 4		
7	E. by N. $\frac{1}{2}$ N.	3 0	N. in 1st reef M. T. S.	
8		3 2		
9	E.	2 4	Wore ship	Thirteen miles northernly set these 24 hours: — judge the current goes strongly to W. N. W.
10	N. W. $\frac{1}{2}$ N.	3 0	N. E. by N.	
11	N. W. by N.	3 0		
12		3 0	Cloudy	
1	N. W. $\frac{1}{2}$ W.	3 2	N. N. E.	
2		3 4		
3	N. W.	3 0	Squally and rain	
4		3 2	In 2d reef F. T. S.	
5		3 2	Squally	
6		3 4	Ditto	
7		3 5		
8	N. W. by W.	3 5	{ N. by E. in 2d reef M. and Miz. T. S.	
9		3 4	{ Got down royal mast, & Miz. T. G. mast.	
10		3 3	{ Down T. G. yds. in 3d reef F. T. S.	
11		3 3		Long. at noon, by chron. 118° 52' E.
12		3 5	Bent the best mainfail	

Distance 79 miles.

Courfe.	D.	N.	W.	M. D.	Lat. A.	XLo.	Long.	by Log.
N. 27° W.	40'	37'	18'	45' W.	17° 39' N.	19'	47' W. Bol.	119° 25' E. Gr.

The first part, a moderate breeze; the latter, blowing a strong gale, and cloudy weather, with a short confused sea.

Lat. obs. 17° 50' N.

H

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K.	F.	Winds, &c.	Saturday, Oct. 11, 1788.
1	N. W. by W.	4	0	N. by E. cloudy	
2		4	0		
3		4	0	Lowered miz. gaff	
4		4	2	{ Bent a new mizen- stayfail	
5		4	4		
6		4	4		
7	N. W. $\frac{1}{2}$ W.	4	4	Hard squalls and rain	The current strong to the W. N. W. assisted by a heavy sea from the eastward.— Eleven miles northerly set.
8		4	4	Ditto	
9	N. W. by N.	4	4	N. E. by N. ditto.	
10		4	4		
11		5	0		
12	N. N. W. $\frac{1}{2}$ W.	5	2	N. E. han. Miz. T. S.	
1	N. N. W.	4	2	Hard squalls	
2		4	5	In 3d reef M. T. S.	
3	N. by W. $\frac{1}{2}$ W.	5	2	{ Bent a storm-jib, heavy gusts of wind	
4		5	2		
5		5	0	{ Got down the yard- tackles as preven- ter-braces	
6		5	0		
7	N. $\frac{1}{2}$ E.	5	0	E. by N. squally & rain	Long. at noon, by chro. last sights 117° 30' E.
8		5	2		
9	N. by E.	5	3	E.	Do. from Cape Bolinao 2° 43'
10		5	3	Set the storm-jibs	
11		6	0		
12		6	2		

Distance 117 miles

Course.	Dif.	N.	W.	M. D.	Lat. A.	XLo.	Long.	by Log.
N. 45° W.	110'	78'	78'	2° 3'	19° 8' N.	82'	2° 9' W. Bol.	118° 3' E. Gr.

Throughout, a strong gale, with frequent heavy gusts of wind, and a short confused sea.

Lat. obs. 19° 19' N.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Sunday, Oct. 12, 1788.
1	N.	5 5	E. by S. cloudy	
2		6 0		
3		5 4	Bent best M. T. S.	At 3 h. 10' long. by
4		5 2	Hazy	chron. 117° 00' E.G.
5		5 2		At 4 h. 5' 20" do. 116° 56'
6		5 0		
7		5 4		At 21 h. 36' 24" long.
8		5 4	Handed mainfai	by chron. 116° 31' E.
9		5 0		At 22 h. 37' 16" do. 116° 27' E.
10		5 0		
11		4 2	S. S. E. very hard rain	N. B. The mean of five altitudes was taken to each of the above observations. They likewise will shew the rate of the current to the westward, the ship having made good a north course between the observations.
12		3 2	{ Variable: wore ship, and stood to the southward	
1	S $\frac{1}{2}$ W.	3 0	E. S. E.	
2		2 5		
3		2 5	Wore ship	
4	N. N. E $\frac{1}{2}$ E.	2 3	E. by S.	
5		2 2		
6		1 2	Out 3d and 2d reef	
	N.	2 0	Made fail, dark and cloudy	Lat obf. 20° 51' 00" N.
			{ Saw the Praters Shoal	By another 20° 51' 00"
7		4 4	{ a N. by E. to N. W.	20° 50' 30"
			{ by N. dif. 7 or 8 miles	
8	N. W.	4 2		
9	N. W. by N.	5 0	Got up T. G. yards	
10		5 4		
11		5 4	{ Bent driver to the gaff,	
			{ and swayd it up.	
12		5 0		

Distance 108 miles.

W M D. X Lo. Long. by Log
 6° 2° 9' W. 6° 2° 15' W. Cape Bolinao 117° 57' E. Gr.

These twenty-four hours the weather has been cloudy and unsettled, with some heavy rain. Being, by chronometer, nearly in the stream of the Praters Shoal, and at midnight within a few miles of its latitude, wore and stood to the southward till

till four A. M. : wore again, and stood close hauled to the N. N. E. till day-light, when we saw the shoal right a-head, bearing from N. by E. to N. W. by N. distant 7 or 8 miles. At eight, A. M. the Praters Rocks bore from N. by W. to E. N. E. ; distant from them 2 or 3 miles; the low island on the western part of the reef N. $\frac{1}{4}$ W. At half past ten, A. M. the island on the Shoal bore E. $\frac{1}{4}$ S. ; distance about 9 or 10 miles; which is the last sight we had of it; and from which I shall take a fresh departure, allowing it to lie in longitude, as deduced by chronometer, from Cape Bolinao; and from the shoal home to Maccoa, in a run of twenty-four hours, to the Grand Lema Island:

At 21 h. 36' 24" the Island on the Shoal, N. E. by E. $\frac{1}{2}$ E. 6 or 7 miles chron. long.	—	—	—	—	—	116° 31' E.
Bearing of the Island	—	—	—	—	—	0° 6'
Longitude of the body of it	—	—	—	—	—	116° 37'
At 22 h. 37' 16" the Island E. $\frac{1}{2}$ S. 10 miles chron. long.	—	—	—	—	—	116° 27'
Bearing of the Island	—	—	—	—	—	00° 10'
Longitude of the body of the Island	—	—	—	—	—	116° 37' E. G.

Which points out the force of the current in three days to be 80 miles to the westward; so that late in the season, the greatest attention ought to be observed in stretching off from Luconia, especially ships that are obliged, *as we were*, to leave it from Cape Bolinao. I would therefore advise, not to leave the coast till in latitude 18° N. ; if that latitude can be gained. The *Louisa* left the coast in 17° 30' and passed the N. E. point of the Praters Rocks about half a cable's length: she put in stays, and fortunately came about; otherwise would infallibly have been lost, from the great error of her reckoning, which I have pointed out on the Chart with a dotted line. The General Coote's error is also every day inserted.

For other particulars, see the description of the Shoal, at the end of this Journal.

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Monday, Oct. 13, 1788.
1	N. W.	5 0	E. by N. cloudy	
2		5 0	E. N. E.	
3		5 5		
4		6 3	N. E. by E.	
5		6 3	{ Squally, thunder,	
6		6 2	{ light. and rain	
7		6 0	{ Close reefed topails	
8		5 3	{ Handed miz. top-	
9		5 0	{ fail, heavy squalls	
10	N. N. W.	5 0	Handed the mainfail	Long. of Gr. Lema $114^{\circ} 14' E.$
11		4 4		Long. of Praters Isl. $116^{\circ} 37'$
12		4 4		
1	N. W.	5 0	N. E.	Diff. of long. $2^{\circ} 23'$
2		5 0		Made from it, by ac-
3		5 0		count to Gr. Lema $1^{\circ} 55'$
4		5 0	{ Blowing in heavy	
5		5 0	{ gusts	An error of 28 miles
6		5 2		
7		4 5		
8	N. N. W.	3 4	Very thick weather	
9		3 0		
10		3 0	Saw the co. of China	
11		3 3	{ Saw the Lema Isl.	
12		5 4	{ to the westward	
			{ Bore up towards	
			{ the islands	

Distance 119 miles.

Course, with the bearing of Praters Isl. at 10 A. M.	D.	N.	W.	M. D.	Lat. A.	XL.	Long.
N. 52 W.	135'	83'	107'	1 ^o 47'	22 ^o 7' N.	115'	1 ^o 55'

Throughout, a strong gale, with some very heavy gusts of wind; the weather exceeding thick and cloudy, with a high sea from the eastward. At 10, A. M. saw the coast of China to the northward. At 11, the Grand Lema Island bore W. S. W.: the northern island, named Poutou, and which forms the passage to go through the Islands, bore W. by N. distance off the Grand Lema 4 or 5 leagues. At noon, the north point of Grand Lema W. S. W. 2 or 3 leagues, bent the sheet cable, and unstowed the anchor

No observation.

I

Ship

Ship GENERAL COOTE, from Sapata towards China.

H.	Courses.	K. F.	Winds, &c.	Tuesday, Oct. 14, 1788
1	W.	6 0	{ Passed the Gr. Lema, bearing S.	
2			{ Hove to, and took a pilot	
3	W. N. W.		E. N. E. cloudy	
4	N. W. by W.		{ Passed Linting to the northward 2'	
5				
6			{ Do. Chicow on the starboard hand	
7			{ Do. Laf-Samey on the star. hand $\frac{1}{2}$ mile	
8				
9				
10				
11			{ Anchored in Maccoa Road in 5 F. with best bower.	At anchor in Maccoa Road, bear- ings as below, chron. shewed :
12				By mean of 5 alt.
1				A. M. 113° 33' E Gr.
2				By 5 ditto 113° 32' 45"
3				By 5 ditto P. M. 113° 34' 15"
4				Mean of the three 113° 33' 20"
5				Deduct the bearing 3' 20"
6				
7				Long. of Maccoa 113° 30' E. G.
8				
9				
10				
11				
12				

Wind from the eastward, and hazy weather: employed getting the ship ready for harbour. At 10, P. M. sent an officer on shore for a pilot. The bearings of Maccoa Church, at anchor in the Road, was W. by N.: the outermost of the Seven Islands N. $\frac{1}{2}$ W.: distance off Maccoa Town about 3 or 4 miles.

Lat. of Maccoa Church 22° 12' by good observation.

The

The Praters Shoal is a very dangerous reef, near the coast of China, Praters Shoal and lies much in the way of ships coming from the eastward late in the season. On the 12th of October, in the ship General Coote, Capt. Baldwin, we made this Shoal; and had a very favourable opportunity of determining its exact position, by a well-regulated box-chronometer, made by Arnold, whose uniformity of rate during our four months stay at China, I could never discover to alter. The observations made use of to determine its rate, were altitudes taken every morning when the sun was between 7 and 8 degrees high, by the natural horizon; so that it must have measured the distances between Cape Bolinao and the Praters in 3 days, to a great nicety: the difference also of the longitude from the Shoal to the Grand Lema Island in 24 hours, and into Maccoa Roads in a day and a half, must be very near the truth. The situation of the Shoal, from the most satisfactory observations I could make, stands as follows: between the latitude of $20^{\circ} 38'$ and $20^{\circ} 52' N.$ and extends east and west about 13 miles, from longitude $116^{\circ} 34'$ to $116^{\circ} 47' E.$ of Greenwich. The body of the low island on the N. W. part of it, is in latitude $20^{\circ} 47' N.$ and $116^{\circ} 37' E.$ The center of the Praters Shoal, from other points in the China Seas, stand as follows:

Center of Prater Shoal, from	Greenwich	—	$116^{\circ} 40' 30'' E.$	Gr. Robertson.
	Cape Bolinao	—	$3^{\circ} 31' 30'' W.$	
	Grand Lema	—	$2^{\circ} 26' 30'' E.$	
	Maccóa	—	$3^{\circ} 10' 30'' E.$	
	Eastern Edge of Mac-			
	clesfield	—	$1^{\circ} 49' 30'' E.$	
	Pulo Sapata	—	$7^{\circ} 45' E.$	
	Grand Ladrone	—	$3^{\circ} E.$	

Mr. Bailey's account, in the Resolution, with Capt. Cook, makes the north-east extreme in latitude $20^{\circ} 57'$; longitude $116^{\circ} 55' E.$; south-west ditto $20^{\circ} 39'$; ditto $116^{\circ} 36' E.$; so that the south-west extreme, according to Mr. Bailey, agrees exactly with my observations; the north-east part differs a little, from the following reasons: they made it unexpectedly at 4 o'clock in the morning, wore, and stood to eastward, and then to the southward; so that their latitude of that part is worked back from the
noon

noon observation, and differs 5 miles from the truth. The south part of the Shoal lies W. N. W. and S. S. E. in an even line, and is a continued range of breakers, which are steep too to the very edge; the western side runs N. N. W. and S. S. E. it did not break, but seemed very shoal water: the island is pretty large, and is full of low shrubs; it lies towards the north part of it, and about 3 miles within the western edge: the farthest it can be seen from off an Indiaman's poop, is about 10 or 11 miles: the breakers may be seen, if they are always in the state we passed them, about 7 or 8 miles, and from the mast-head, nearly 10 miles. The north and east parts seemed to form a right angle. I did not see them break on any part, nor was there any broken water in the center of the reef; it appeared much discoloured, and looked as if it was tolerably deep water. From the Resolution's account, who made the north-east part, they heard the breakers before they saw them; so that I imagine, at times, all the sides of it break, according to the direction of the wind.

Coast of
Luconia

The west coast of Luconia, from Cape Bolinao to Point Capone, is described on the Chart, from my own observations in the ship General Coote; and to the northward of Cape Bolinao, from the Louisa's journal. The north part of it, including the Bashee and Babuyan Islands, are laid down from the observations of Mr. Dalrymple.

Formosa.

The south coast of Formosa is remarkably high land; it may be seen 20 or 22 leagues. I have placed it from my own observations in the Vanfittart: the small island between it and the coast of China, is high and rugged, and is also laid down from the observations made in that ship.

Island of
Botel-Toba-
go-Xima.

The island of Botel-Tobago-Xima lies due east of the south point of Formosa, distant from it about 30 miles. It is likewise very high land; and I think may be seen 18 or 20 leagues in fine weather.

Vele-Rete
Rock.

The Rock Vele-Rete is very dangerous, and lies much in the way of ships coming from the Pacific Ocean to the northward of the Bashee Islands: it appears above water in peaked rocks, and has breakers all round.

At

At 9 A. M. saw the Rock Vele-Rete bearing W. by N. at noon; it bore north distance $2 \frac{1}{2}$ leagues: it seems environed with rocks, extending a mile or two round it, on which the sea breaks very high: judge its distance from the south part of Formosa to be 5 or 6 leagues, and appearing very small: is not to be seen above 3 or 4 leagues in clear weather. When this rock bore N. W. by N. we perceived the water discoloured; but in half an hour changed its hue to a sea-colour.

Royal Cap-
tains Ac-
count of it.

Latitude observed $21^{\circ} 38' N.$

Ditto of the Rock $21^{\circ} 45' N.$

October 23, 1762.

The Natuna Islands and west coast of Borneo, soundings, &c. are laid down from my own observations in the *Vanfittart*; their longitude is fixed from the observations made by Capt. W. Frazer; also by his time-keeper, which confirmed their relative positions with respect to each other. For a particular description of these parts, see my former publication of a *Passage from China*; wherein is explained at large, the whole materials made use of, accompanied with charts upon a large scale from the Natuna Islands to Carimata and Souroutou, and from thence through the Clements and Gasper Straits, down to the Straits of Sunda. Since the publication of these charts, there has been what may be deemed an actual survey made of the Gasper Straits, and the north and south points of Banka, by Capt. Lestock Wilson, in the *Vanfittart*, 1789; who from an unforeseen accident, after he had just finished his observation, unfortunately struck upon a sunken rock, lying 30 miles from the coast of Banka, in latitude $2^{\circ} 11' S.$; the ship received so much damage from the stroke, that it was found impossible to keep her afloat. He immediately resolved on running her on shore, which, with the utmost difficulty was accomplished on a small island in latitude $2^{\circ} 9' S.$ 5 or 6 miles from the Banka shore, where the crew left her and took to their boats; in which they went round the north point of Banka, and luckily fell in with two English country ships, who returned with them to the wreck and saved part of the treasure. As the whole survey will soon be published, I have nothing more to add, save that I have corrected that part of the Chart from Captain Wilson's own observations, a copy of which he very politely gave me with every other

Natuna
Islands and
West Coast
of Borneo.

K

information,

information, that I required to complete the present work. For the latitudes and longitudes of the particular points of Banka, also the Natuna Islands and those along the west coast of Borneo, see the Table of Latitudes and Longitudes.

Soundings
between
Borneo and
Straits of
Mallacca.

The track of the Vanfittart amongst the group of Southern Natunas, shews the soundings of that ship. The soundings between the Grand Natuna and southern ones are from the Granby, Capt. Johnson's journal, in company with the fleet returning from China, 17 . Those from Camel's Hump Island across to Direction Island, are from Mr. Welladvisé's chart and observations, in ship Glatton. The cluster of islands and southernmost of the Holy spirits are likewise placed from his chart. The soundings close to the shore, and round to the northward of the Grand Natuna, are from Mr. Dalrymple; also are those amongst the Anamba Islands.

Pulo
Panjang.

The island of Pulo Panjang, and small ones lying near it, to the southward, are placed from my own chronometer from Pulo Auro: the track and soundings is the General Coote's track home, 1789, down to the Straits of Banka.

Doogers
Banks.

The Doogers Banks certainly exist, and are very dangerous; they are placed on the Chart, in their true situation, from the following corresponding accounts: I took M. d'Apré's distance from Pulo Panjang, allowing my own longitude of that island, which places them in 40° N. and longitude $105^{\circ} 26'$ E; to confirm which, the Ganges saw the shoals: her latitude of them is 37° N. $105^{\circ} 29'$ E. from Greenwich; so that I have little doubt of their being nearly right.

Monopin
Hill.

I have placed Monopin Hill from Capt. W. Frazer's lunar observations in $105^{\circ} 6'$ E. from Greenwich, by a mean of 15 sights of stars east and west of the moon; which I am happy to observe agrees exactly with the Resolution's time-keeper from Pulo Sapata. Capt. Cook makes $3^{\circ} 52'$ difference of longitude between those points; and Mr. Bayley $3^{\circ} 49'$; which taken from Sapata's longitude $108^{\circ} 55'$, leaves Monopin $105^{\circ} 5'$:
Capt.

Capt. Wilfon's projection makes it $105^{\circ} 14'$; but as Capt. Frazer's seems to be the most satisfactory, I have adopted it.

Lucepara Island is deduced from Monopin Hill, being $1^{\circ} 3'$ to the eastward of it, by Capt. Hodgson; $57'$ by Capt. Cook and Lieut. King; $1^{\circ} 3'$ by Mr. Bayley; the mean of which places it in $106^{\circ} 6'$ E. its latitude is $3^{\circ} 12' 30''$ S.

Lucepara
Island.

The islands called the Two Brothers, are placed by the Resolution's chronometer, from Lucepara, in longitude $106^{\circ} 3'$, or 3 miles west of Lucepara: the latitude of the north part of the northernmost is $5^{\circ} 9'$ S.: and the south part of the southernmost $5^{\circ} 11'$ S.

Two
Brothers;

The Peak of Crockatoa Island lies 40 miles to the westward of the Brothers, according to Mr. Bayley's chronometer; I have therefore adopted that quantity, which places it in $105^{\circ} 22'$ E. By taking its difference from Java Head, which is 12 or 13 miles to the westward of it, brings it exactly to the same thing.

Crockatoa
Peak.

The Hounts, or Hog Islands, are placed from my own lunar observations and chronometer; as also Bantam Point, which I make by chronometer, to lye 52 miles E. of Monopin, or $105^{\circ} 58'$ E. from Greenwich. The latitude of the northernmost of the Hounts Islands is $5^{\circ} 52'$; Bantam Point $5^{\circ} 54'$ S.; the west end of Pulo Baby is in latitude $5^{\circ} 48' 20''$ S.

Hounts, or
Hog Islands.

Bantam
Point.

The Browers Sand has two dry spots upon it, one at each end: we made it in the General Coote, and had the following cross bearings taken by a stop azimuth-compass; it lies in the direction of N. by E. $\frac{1}{2}$ E. and S. by W. $\frac{1}{2}$ W. $2 \frac{1}{2}$ or 3 miles in length, and not more than a quarter of a mile in width. We run along the eastern edge of it at the distance of $1 \frac{1}{2}$ or 2 miles, regular soundings 15 fathoms.

Browers
Sand.

North

Bearings of
the Shoal.

North end of Browers Shoal, in
one with North Brother S. 64° W.

Body of ditto, in one with the
South Brother — S. 65° W.

{ South Extreme of ditto, in one
with South Brother — S. 63° W. }
{ North Watcher at same time bearing S. 47° E. }
{ Distance from the Shoal 3 miles 15 fathoms. }

The north part of the Shoal and the North Watcher, lies from each other N. 52' $\frac{1}{2}$ W. and S. 52' $\frac{1}{2}$ E. North Brother at same time N. 71° W. The southern dry spot and North Watcher bear from each other N. 55° $\frac{1}{2}$ W. and S. 55° $\frac{1}{2}$ E. The two dry places in one N. 17° E. distance from the Shoal 2 $\frac{1}{2}$ miles; at same time the North Watcher S. 65° $\frac{1}{2}$ E.; North Brother S. 76° W.; the South Brother S. 71° $\frac{1}{4}$ W.; High Hill on Java S. 30° E.; soundings 15 fathoms.

Shoals near
the Brothers.

The situation of the Lynn and Dolphin Rocks, also the Shabander Shoal to the westward of the Brothers, are fully explained from what authority they are placed in my former publication.

Straits of
Sunda.

There is a rock lies between the Button and Thwart-the-Way, which the Harrison struck upon and knocked off a piece of her main keel: she fetched four or five fallies and got off, so that it must be very small; it bears about S. E. by S. 3 miles from the Button, and the Dutch say, at low water, there is but 15 feet on it. From the above account, I think it would be adviseable not to go between the Button and Thwart-the-Way.

Java Head.

The longitude of Java Head, or west point of Java, is from my own observations determined by chronometer and corroborated by nine different lunar sights of stars, Aldabaran and Regulus of each side of her, taken with an improved sextant, the inverting telescope, a magnifying power of nine times, with every other advantage of an uncommon clear atmosphere, and the moon nearly vertical, a situation wherein the errors in parallax is less

less than at any other altitude; of course, the best time to observe; the result and mean of the whole places Java Head in longitude $105^{\circ} 9' E.$ from Greenwich; and its latitude by a good observation $6^{\circ} 48' S.$ In order to confirm my own position of it, I shall here set forth other gentlemen's observations: Capt. Lestock Wilson, of the *Vanfittart*, by his projection, places it in $105^{\circ} 11' 15'' E.$; Mr. Bailey, in the *Resolution*, $105^{\circ} 5' E.$; Capt. Cuming, in the *Britannia*, $105^{\circ} 14'$ by chronometer to Batavia; Mr. Carruthers, chief officer of the *Europa*, $105^{\circ} 9' E.$ agrees with my own, and is that which I have adopted, being the nearest mean of the whole.

I have followed M. d'Apres's last edition, for the south coast of Java. South Coast
of Java.
Wine-coopers Point is in latitude $7^{\circ} 28' S.$ and lies about 30 leagues to the eastward of Java Head.

From St. Nicholas Point to Batavia is from my own observation: the large tree on the Great Cambuys Island lies in latitude $5^{\circ} 49' S.$: The outline of the coast from Batavia to the east end of the island of Madura, is from D'Apres's last edition: the longitude is corrected from the observations of Capt. William Frazer, who places the south-east end of Java in longitude $114^{\circ} 40' E.$ from Greenwich. North Coast
of Java.

That space of the Chinese Sea to the southward of $11^{\circ} 30' N.$ lat.; and from Pulo Sapata eastward to the coasts of Palawan and Borneo, is all over so full of rocks and shoals, there is no possibility of avoiding them, if a ship takes that course. I have inserted on the Chart all those taken notice of by Mr. Dalrymple; their position is only determined by the dead reckoning of the ships which fell in with them. The shoals which the *London* saw in going across from Pulo Sapata to Balabac, are placed from Capt. Esterbroek's account: their longitude is from lunar observations; and stand as follows: Shoals in the
Center of the
China Sea.

	Lat.	Long. from Gr.
1st breakers extending 2 or 3 miles	9° 39' N.	112° 30' E. f. & m.
2d breakers, with little break and pointed rocks	8° 45' —	112° 33'
3d breaker, three sand- banks	8° 53' —	112° 24'
4th breakers, E. S. E. & W. N. W. 4' or 5'	7° 33' —	113° 49'
5th breakers, in sight at same time	7° 28' —	

I have also inserted the shoals seen by the *Louisa* country ship, in her passage from the Northern Natuna Islands to Keeney Balloo on the coast of Borneo; with a continuation of that ship's tract from Balambangan along the west coast of Palawan; and from whose journal I was enabled to make corrections in some of Lieut. Barton's latitudes. His chart of the coast is however in general very correct, having examined it by that ship's journal, and found it to correspond very nearly. The *Louisa* kept the shore close on board; in general anchored at night, and met with a shoal or two which Barton had taken no notice of. The rocks in the offing are from Mr. Dalrymple's observations along that coast; also the north part of Borneo and Sooloo Archipelago are from him, with some alterations and insertions from the journals of the Royal Captain, in the year 1762, and the Lord North, home from China, in 1782, with tracts of these ships.

Surigao
Passage.

The Surigao Passage into the Pacific Ocean, to the northward of Mindanao, or Magindanao, is laid down from a chart made on the spot by Mr. Greer (now Capt. of the *Belvidere*) then third officer of the Royal Captain, who very politely gave me all the views and observations he had made in that track, with a plan of the bay and village of Surigao, on the N. E. part of Magindanao. There is no foundings in that passage; nor does there appear to be any dangers whatever: but the tides are so very strong in Surigao Bay,

Bay, and amongst the islands lying off the north part of Mindanao, that it is totally impossible for a ship to ride when they are at the strongest.

October the 6th, 1762, at $\frac{1}{2}$ past one, P. M. bore away for Surigao Village; at three, came on board a native, a pilot; worked into the Bay, and at half past five came to, with the spare anchor in 25 fathoms grey sand; at $\frac{1}{2}$ past one, A. M. parted the cable; immediately let go the sheet anchor, the ship then driving at a prodigious rate up the harbour. When she had got near a whole cable out, she brought up the anchor, having hooked a rock, but not before they had drifted up the harbour about 5 or 6 miles, the tide at that time running 6 and 7 knots per hour; at 4 A. M. the tide abated; brought the cable to the after-capstern, in order to run nearer the shore, to get out of the immense tide; the anchor being hooked to something, which prevented weighing it easily, before a purchase could be got on it, the ship tended to the other tide, which increased so rapidly, that it tore away all the palls of the capstern; luckily the runner and tackle, which held on the cable, got round and choaked it, in consequence of which it was prevented from running out to the clinch. The people were fortunately from the bars, sheeting home the topsails, when the accident happened, otherwise they would all have suffered very much; immediately cut the cable, and stood out of the harbour; fired guns for a pilot; came on board, one, with three other men. Before they cut, Mindanao bore from W. by N. to N. W. by N.; the town W. $\frac{1}{2}$ S. 5 miles; the extremes of the island Pannon from W. N. W. to N. W. 7 or 8 leagues; the small island off the north point N. W. by W. 3 leagues; the larger one N. W. $\frac{1}{2}$ N. 5 leagues; current nearly 10 knots per hour. October the 8th, got out from amongst those islands, sent the pilot and the three men in one of our small boats, with a proper quantity of provisions, &c. to make the best of their way home again: at noon the island of Soloan bore W. N. W. $\frac{1}{2}$ N. from which they took a departure, allowing its latitude $10^{\circ} 49' N.$
Latitude observed $10^{\circ} 26' N.$

Royal Cap-
tain's Log.

A continuation of that ship's track is inserted on the Chart, till they came in sight of Vele-Rete Rock, off Formosa.

For

For the east coast of Luconia and the Philippine Islands, I have followed that elegant chart, published in France, by order of *M. Rouille*, minister and secretary of state for the marine department, 1752; being a copy of the *Spanish Chart* of those islands, made by *R. P. Pierre Murillo*, of the Company of Jesus; engraved at Manilla, in the year 1744.

The Philippine Islands were discovered by Ferdinand Magellan, the first circum-navigator, on the Saturday before Easter, in the year 1521; he named them the Lazarus Archipelago, that being, in Spain, St. Lazarus-day: however they were afterwards named Philippines, in honor of Philip II. King of Spain, who conquered them; since which they have always been subject to that crown. The number of those islands is immense; therefore I shall only mention their extremes each way.

The Island Luzon, or Luconia, is the northernmost, largest, and most considerable; having the city of Manilla, which is the capital and seat of government of the Philippine Islands, placed on its west part, on a point of land between the Bay of Manilla and the Lake of Bahi.

Magindanao is the southernmost, and next in bulk and value.

Palawan is the westernmost, and next to the two former in extent.

Philippina, Tandaya, or Samar, is the most eastern of the whole: within and about those four islands, lie all the others. The soil of all of them is rich, and produces every kind of Indian fruit; but what renders them more considerable, is their invaluable commodities for traffic, viz. rich pearls, ambergrease, cotton, civet, bezoar, and gold, gathered to a vast amount, without the help of fire or quicksilver.

The island of Zebu is famous for being the first of the group whereon his Catholic Majesty's standard was planted, in 1521; and where, afterwards, the conquest of the whole was begun. The liberty of sending ships to New Spain was first granted to Zebu; the rise of Manilla has been the sinking of it. Ferdinand Magellan is said to have been killed on this island; but

but the Spanish account says it was upon the small island of *Maellan*, lying off the city of Zebu, 1521.

The island of Carimata is high land, and may be seen 15 leagues. Souroutou is not near so high, or so large. The north part of Carimata is in latitude $1^{\circ} 33'$ S. and longitude $108^{\circ} 50'$ E. from Greenwich, by Capt. Frazer's chronometer. Mr. Farrington (now captain of the *Lascelles*) by observation of sun and moon, makes Souroutou Island to lye in $108^{\circ} 45'$: as he had not the objects east and west of the moon, it cannot be so exact; however it agrees tolerably with the chronometer: the latitude of its north part is $1^{\circ} 37'$ S. All the small islands to the northward of Carimata are from my own observation, when on board the *Vanfittart*. To the eastward of Carimata, between it and Borneo, are many islands and dangers, which the *Osterly* experienced when she went that way.

Islands of
Carimata and
Souroutou.

The small islands off the north-east point of Billiton, lye in $2^{\circ} 33'$ S.; and bear from Souroutou S. 33° W.—The soundings in the Carimata Passage are laid down from the *Lascelles*'s journal. The White Rock is likewise placed in its true latitude from that ship's journal: it is called by the French, *Island Blanc*; by others, *Bird Island*; and was seen by M. Crozet, who passed to the westward of it. I have inserted his soundings and track down to the North Watcher. The rock, soundings, and shoals near the Billiton shore, are from the *Hector*, Capt. Williams's remarks, in the year 1769. I have continued the *Lascelles*' track and soundings down to the Straits of Bally. The latitude of Bird Island is $3^{\circ} 40'$ S.

Small Isl. to
the N. W. of
Billiton.

Carimata
Passage.

Pulo Mancap and the south west point of Borneo are from Capt. George Baker's chart of that part. The south coast of Borneo, as far eastward as Point Salatan, is also from his observations. The extremity of the shoal to the southward of Pulo Mancap, is in $3^{\circ} 22'$ S. from the ship *Walpole*'s account, who was a-ground upon it. According to M. d'Apré's, the Bank of St. Clement, which is dangerous, lies in $3^{\circ} 00'$ S.

Pulo Mancap

Bank of St.
Clement.

The appearance of the island Lubeck at a great distance, is in separate hummocks; when near it, it is very ragged land. The highest part of it is to the north-west, and is in latitude $5^{\circ} 49'$ S.

Isl. Lubeck.

M

The

Isl. Carrimon
Java.

The island Carrimon Java is tolerably high, with a number of small islands around it; when it bears N. $\frac{1}{2}$ W. 4 or 5 miles, had 31 fathoms course ground. Its latitude is $5^{\circ} 49'$ S. Soundings between it and the island Edam, are from 20 to 32 fathoms. When at anchor under Carrimon Java, bearing and distance as before mentioned, Point Allangon Java bore S. E. $\frac{1}{2}$ S.; the westernmost land S. W. $\frac{1}{2}$ W. at a great distance.

Bumpkin
Island.

Bumpkin Island lies about 36 leagues to the eastward of the island Edam, in latitude $5^{\circ} 52'$ S. Pulo Rackit is to the southward of it: between them it is full of shoals. There is also a dangerous ledge of rocks to the north-eastward of Bumpkin Island; for when it bore S. $\frac{1}{2}$ E. 6 leagues, the reef of rocks bore S. S. E. $\frac{1}{2}$ E. 3 or 4 leagues.—Ship Ponsborne's account.

Great So-
lomba.

The southernmost Solomba is the largest and highest island: it lies in latitude $5^{\circ} 28'$ S. The northernmost bears from it nearly N. by W. $\frac{1}{2}$ W.; is low and flat: its latitude $5^{\circ} 12'$ S. The track of soundings, from the North Watcher to Point Salatan on Borneo, is the True Briton's, outward to China, laid down from Mr. Hunt's (late captain of the Dutton) journal; from which I was enabled to place the Pater-Nosters in the Straits of Macassar; also many other points, which will be mentioned hereafter.

Instructions

*Instructions for the Straits of Macassar, received at Batavia from Mr. Boye
Hoyer, Pilot of the Great East, Dec. 1788.*

“ Being in Batavia-Roads, and your intention is to proceed that way, a direct course to steer from the island Edam to Point Salatan on Borneo, is as follows: pass the Rynland Beacon on the larboard hand, and steer right upon the island Edam, its latitude $5^{\circ} 56'$ S. pass between it and the island Alkmaar. When Edam bears north of you an English mile, then steer E. N. E. twenty leagues; then steer E. by N. to the latitude of $4^{\circ} 15'$: hold this latitude, and steer right east, which will bring you in sight of Point Salatan; and about two leagues off the Point, its latitude is $4^{\circ} 8'$ S. Come no nearer the said Point than 9 fathoms; from that depth it shoals suddenly to 5 fathoms, if you stand towards the Point. When Point Salatan bears north, in 9, 10, or 11 fathoms, and you will coast Borneo, steer then E. by S. 23 English leagues, which will bring you in sight of a high peaked island, called Moreffes; which island you will leave on the larboard hand two English miles.—When this island bears north two miles, you will have 16, 17, or 18 fathoms water.

Course from
Edam to
Point Sala-
tan.

Point Salatan
on Borneo.

Island of
Moreffes.

“ In the west monsoon, the currents in the months December and January set strong between Borneo and Java, in the fair way E. N. E.

Currents.

“ From the island Moreffes keep an E. by N. $\frac{1}{4}$ N. course 7 or 8 leagues, which will bring you in sight of three small islands, called Dwaalder, and the Two Brothers; the northern of which is the Dwaalder, and the two southern ones are the Two Brothers. You pass between Dwaalder and them in depth of 12 fathoms, clay and mud. When past, you will find deeper water, 20 and 21 fathoms, clay and mud. The latitude of the island Dwaalder is $4^{\circ} 10'$ S.; and the two Brothers $4^{\circ} 24'$, lying from each other N. N. W. $\frac{3}{4}$ W. and S. S. E. $\frac{3}{4}$ E. four and a half leagues. Amongst these little islands you will see Great Pulo Laut, bearing between N. W. by N. and N. W. and the northernmost point N. by W. When passed the Dwaalder and Two Brothers, the currents begin to set N. E. by E. and N. E. Under the

Islands
Dwaalder
and Two
Brothers.

Current.

the Great Pulo Laut there are three large islands and a smaller one; but those islands are close in shore.—The north-east point of Great Pulo Laut is known by a small rocky island lying off the said point.

“ From the Dwaalder and Two Brothers steer N. E. by N.: $10\frac{1}{2}$ or 11 English leagues will bring you in sight of the Three Alike Islands: which three small islands you leave on your larboard hand, $1\frac{1}{2}$ or 2 English miles. The depth between the Two Brothers and Three Alike Islands, with a N. E. by N. course is 14, 15, 16, 17, 18, and 19 fathoms, clay and mud. The passage is equally good inside of these islands.”

[Here may be observed, the current sets N. E. and N. E. by E. The islands here called *Alike*, are likewise named by the English Maragolang. They lie in latitude, by Mr. Hoyer, in $3^{\circ} 37' S.$; which agrees with my position exactly, taken from the English accounts.]

“ From these small islands, if possible, keep the depth from 8 to 14 fathoms, until you have observation $2^{\circ} 10' S.$ when you are past all the danger on the Coast of Borneo: for in 16 and 17 fathoms, from the Three Alike Islands, lie two sand-banks even with the water's edge.

“ From latitude $2^{\circ} 10' S.$ with an E. N. E. course, for a while you'll have 14, 15, 16 and 18 fathoms water; but in $1^{\circ} 50' S.$ in sight of Borneo, you will find 22, 25, and 30 fathoms; and in latitude $1^{\circ} 20' S.$ 10 leagues off Borneo, 28, 29, 30, 32, and 35 fathoms, clay and mud:—in latitude $40' S.$ you will have 50 and 45 fathoms, 12 leagues off Borneo, which land is hereabouts very high. In 1° north latitude, you will see the coast of Borneo, 6 or 7 leagues off, and the coast of Celebes N. W. part in the E. $\frac{1}{2}$ N. a great way off.—No soundings. From latitude $1^{\circ} N.$ we steered N. E. 24 leagues, and observed our latitude to be $1^{\circ} 33' N.$; found the island Banca, lying off the north point of Celebes, to be in latitude $2^{\circ} 10' N.$; and the islands between Banca and Zangir, from $2^{\circ} 15'$ to $2^{\circ} 20'$ north latitude.

BOYE HOYER.”

The

The fleet in December, 1788, consisting of five Indiamen, viz. Bridgewater, Raymond, Duke of Montrose, Contractor, and Asia, went this passage, and followed Mr. Hoyer's instructions; which they found to be very exact. The coast of Borneo, from the Great Pulo Laut to Kanneeoongan, or Van Gassen's Hook, is laid down principally from a chart of that part made on board the Bridgewater. The soundings are partly from that ship, and partly from the Duke of Montrose. The two dry sands lying off the north part of the Ragged Point, are placed in their true position and distance from the shore, according to the observations made on board the Duke of Montrose, and communicated to me by Mr. Robinson, chief officer, along with an elegant set of views of particular headlands and islands in that passage.—Mr. Robinson remarks, that “the ship Duke of Montrose, Dec. 14, 1788, at 1, P.M. in latitude $2^{\circ} 14'$ S. the north part of the Ragged Point on Borneo, or Tong-jong-Ayres, bore N. W. by W. distance 4 or 5 leagues; at same time, saw two sand-banks, dry and almost even with the water's edge. They appeared to be about 4 or 5 miles from us; and I suppose they may be about three leagues from the Borneo shore. At this time the nearest one to us bore due west, and the one nearest the shore was open to the southward of it. We had 12 fathoms water at the time. Great caution ought to be taken hereabouts, particularly in the night, as those banks lie very much in the fair way between the Pater-nosters and the coast of Borneo;” and that all along what is called the Ragged Point is the most dangerous part of the Straits; and observes that in standing off, after you deepen above 12 fathoms, the soundings are very irregular, deepening and shoaling 2 or 3 fathoms at a cast, as quick as the lead could be hove: when standing in shore, to 5, or even $\frac{1}{2}$ less than 5 fathoms; and off, to 10, 12, or 13, had always very regular soundings; so that it plainly appeared to be the safest method to keep nearly in those depths. In standing in shore, after passing the depth of 7 fathoms, found it very flat, and seldom shoaled above one foot in a dozen casts of the lead: the bottom strong clay. The Ragged Point is low land, the north part of which lies in latitude $2^{\circ} 35'$, by good observation, when it bore due west; and its longitude, by observation of the moon and stars, Arietis and Pollux, of each side of her, $117^{\circ} 41' 40''$ E. from Greenwich; which is what I have adopted as the only standard for the longitude of the east coast of Borneo

Maccassar
Straits.

N

Point

Point Salatan Point Salatan is low even land, with high land at the back of it. By the English ship's accounts, its latitude is $4^{\circ} 9' S$.

Moreffes Island. The island Moreffes, or Maruffa, is a high solid body of land, in latitude $4^{\circ} 23' S$.

Little Laut Islands. The islands of Little Pulo Laut are hummocky, and not high.—The Brothers are so called from their resemblance to each other: they are very small, but steep too.

Dwaalder. Button. The island Dwaalder, when bearing W. N. W. has the appearance of a saddle, and is not high.—The Button is remarkable; at first sight it appears like a single tree; but when near, it is a high round rock, and appears as if cut by art:—found 7 fathoms close to it all round, except the north-west part, where there is a shoal.

The north-west part of the Great Pulo Laut is very high land.

Pater-noster Isl. and Shoals, True Briton's Acc. of them. The southernmost of this dangerous cluster of islands and shoals was seen by the True Briton, going to China, November, 1785. It is a low sandy island, with three small trees upon it, which made me call it Three-Tree Island.—Their account places it in latitude $2^{\circ} 50' S$. The ship passed at the distance of three miles from it. Keeping on a N. N. E. course 18 miles, they saw the grand cluster of Islands, bearing from N. W. to E. N. E. which they endeavoured to get a passage through; but without success, from the immense number of shoals which are dispersed amongst them; so that they were obliged, after being six days in the middle of them, to return nearly in the way they got in. They found the current generally set to the southward, though not strong. The islands are all woody, some of which is almost as hard as iron. They found much of it lying cut down, supposed to be done by the people in the prows, of which there were several about the ship; but so shy that none would venture on board. The only living creature they saw while amongst this dangerous groupe of islands, was a bird like a pidgeon, of which there were but very few. The extent of the Pater-noster, in point of latitude, appears, by the true Briton's account, to

to be from 2° S. to the small sandy Island in $2^{\circ} 50'$ S.—There is founding, from Great Pulo Laut, all the way up to this cluster of islands in a direct line. How far they extend to the eastward I cannot pretend to say.—I have inserted upon the Chart a continuation of the True Briton's track into the Pacific Ocean; which explains several material points, particularly the Seven Islands, which all charts place ten leagues off the Celebes shore. The True Briton was amongst them, and proves them to be not more than five leagues from it; and in latitude 30 miles north of the Equator. If any other Islands did exist, she must have seen them. I therefore conclude they are the Seven Islands. Point Donda on Celebes is prodigious high land, and now placed in its true latitude and position, with respect of Kanneeoongan Point and Cape Rivers. Between the Points Kanneeoongan and Donda, the Straits are the narrowest, being not more than 20 leagues wide. The Island of Maratua, with the shoals and track along the coast of Borneo to northward of Kanneeoongan is placed from the Jason's account, in the year 1774.

The north coast of Celebes, from Cape Rivers to the northern extremity, is taken from the correct Dutch Chart, upon a scale of six inches to a degree, procured by Capt. Wilson of the Company's ship Pitt, in 1759; and who was the first that discovered and pointed out, that a passage to China could be attained at all seasons. The eastern coast and bays of Celebes are principally from that chart. The islands which lie between Magindanao and the north point of Celebes, are all placed from the observations of those ships whose tracks are inserted upon the Chart. Sangir is the largest. Its north point is in latitude $3^{\circ} 48'$ N.; longitude, $125^{\circ} 27'$ E. from Greenwich. It is very high land; and may be seen 15 or 16 leagues.

Island Sangir

The Cone bears from Sangir about N. by W. 10 or 11 leagues; and is in latitude $4^{\circ} 15'$ N. The Karkoralong and Sallibobo Islands are put in their true latitude and bearings from the island Sangir. The south coast of Magindanao is principally laid down from Capt. Forrest's voyage. The islands Meangis from M. d'Apres.

Islands to the northward of Sangir.

The

Siao Island.

The island Siao is very high, appearing in several peaks; the northernmost of which is by far the largest. The latitude of the south point, which is lower than the rest, is $2^{\circ} 35' N.$; and lies due south of Sangir. The above account is from Mr. Robinson, of the Duke of Montrose.

Biffano and Banca Islands

The islands to the southward of Siao are named Biffano and Banca, and are placed, in point of latitude, from the Lord North's and Bridgewater's observations, in their exact situation.

Moratay Islands, and the North coast of Gillolo.

The north point of Gillolo and north cape of Moratay Island are placed from the Lord North's account, returning from China, July 1782; also corroborated by the observations of the fleet going to China, in 1788. The Salondin Islands are those small islands lying off the north point of Gillolo. I have placed them from corresponding observations of the fleet and ship Lord North.

The Molucco Passage is between Celebes and Gillolo. The position of the islands and their latitudes are inserted to a great degree of precision, as also the north part of the Xullas, from the Lord North's journal, who beat a whole month without effect, endeavouring to gain the Pitt's Passage. I have put her track on the Chart, which will better describe her situation than words can express.—As the longitude of the Xullas is well determined, by Capt. Frazer's observations and chronometer, it is a standard for the true longitude of the Tawally, Gillolo, and Molucco Islands, whose reciprocal position with respect of each other upon the Chart, are placed right to a very small quantity, consequently in their exact longitude from projection.

Gillolo Passage.

The islands in the Gillolo Passage are laid down, partly from the French ships which came that way in the year 1768, and partly from Capt. Thomas Forrest; particularly the north coast of Weyoagee, and islands immediately near it. The Yowl Islands are from the Lord North's account, who anchored amongst them.

Yowl Isl.

I have

I have found it absolutely necessary, in order to be distinct, that each *passage*, *strait*, and *sea* should have a *name*. There being several of these within the limits of this Chart, not signified by former geographers, I have supplied the deficiency, which, I hope, will be found not altogether improper, or inapplicable to their assigned situation.

The *Mindoro Sea* is the space between the island of that name (coming out of the China Sea) and Sooloo Archipelago, to eastward of Palawan.

I have considered the sea to the southward of that Archipelago to be the Sooloo Sea, which is formed by the north coast of Celebes to the south, the east coast of Borneo to the west, and the Passages of the Sangir Islands into the Pacific Ocean, on the east. My reason for particularly distinguishing those two seas was to prevent any mistake in the describing of passages, which otherwise did happen, when they were both understood as one and the same; which will plainly appear was the case from the following note in Mr. Dalrymple's "Memoir of Passages late in the Season to China," which first suggested to me the necessity of an alteration :

Page 3 of Memoir.—“ When a ship has got over towards Balambangan, she has the choice of proceeding by the west coast of Palawan, or between that island and Borneo, through the Sooloo Seas.”

If the Sooloo Sea comprehends that to the northward to be of the same name as that to the southward of the Archipelago, the above account is very undescriptive; as a passage up the northern one (or what I call the Mindoro Sea) would not be attainable at that season; whereas the southern one (or Sooloo Sea, as I have named it) is the proper route, and what I imagine was Mr. Dalrymple's meaning, should be taken, circumstanced as he above observed. At all events, it will point out the propriety there was in having distinguishing names to those two seas, whose outlets lead so very differently, although to obtain the same port; and will plead an excuse for the liberty I have taken in assuming the same.

The passage between the islands Negros, Zebu, Bohul, and Leyte, on the one hand, and the north coast of Magindanao, on the other, I have named Surigao, from the village and bay of that name, situated on the north point of Magindanao.

I have given the Molucco Passage its name from the islands esteemed the chief of that Archipelago being situated in it. They are properly but five in number, viz. Ternate, Tidore, Moutier, Machiam, and Batchian; and are as notable for the *clove* as the Banda Islands are for the *nutmeg*. The derivation of Molucca is from the Malayan word *Moloc*, which signifies the head of a great thing. Although these are the *real* or *proper* Molucca islands, it must be understood there are a vast number of small ones adjacent, included in that class, too tedious here to mention; however Gillolo, Amboyna, and Cerem are reckoned amongst the number.

The Gillolo Passage is formed on the west by the island of that name, and on the east by Weyoogee.

The Pitt's Passage is to the northward of Bouton, Cerem, and Mysole; and to the southward of the Xullas, Oby Major, and Popa. It is so called after the Company's ship Pitt, Capt. Wilson, in 1759, being the first who went that track, in order to gain a passage to China.

I have thought it proper to name the Banda Sea from Banda, the principal and largest of the Nutmeg Islands, which is situated nearly in the centre of it.—The Island in appearance resembles a horse-shoe, in the middle whereof is a fair bay, wherein stands the chief town, surrounded with groves of nutmeg-trees. English ships, as far back as the year 1600, used to frequent these parts; but soon after that period, were prevented by the Dutch, who have ever since engrossed the whole trade, and will permit no other nation to trade in *nutmegs*. There are five or six very small islands lying round about Banda, at a few leagues distance, which also produce nutmegs. These are named Pulo-Way, Pulo-Rin, Nera, Gumanapi, and Guligen; and are the only spots in the world where that delicious spice comes to perfection.

The

The Borneo Sea is the space between the south coast of that Island and the north coast of Java, extending east and west, from Sumatra to the island of Salayr.

The Tryal Rocks are so named from the English ship Tryal, which was lost upon them in 1722.—The great discordance in point of their latitude obliged me to place them upon the Chart according to both Dutch and Danish accounts.

Tryal Rocks
near New
Holland.

The Dutch sent a sloop from Batavia to ascertain their situation; whose report places them in latitude $19^{\circ} 30' S.$ 80 leagues west of New Holland.

The Dutch
Account of
them.

In the year 1777, they were seen by the Fredensberg-Castle.—The following account is a copy of a letter from Capt. Foss, commander of her, to Mr. Vogelfang, dated Wampoa, Nov. 25, 1777:

Danish Ac-
count.

“ SIR,

“ I have the honour to send you the promised account of the Tryal Rocks.—I passed them to the westward at two Danish miles distance. I found them to extend N. W. and S. E. 6 miles. They are low and flat, not higher to look at than a large fish lying upon the water. They are surrounded with many small rocks, at the distance of half a mile around the largest, upon which there was a great surf; and they bear from Java-Head S. $\frac{1}{4}$ W. 210 miles. Being with the ship due west of them, at the distance of 3 miles, I had a good observation, and make the latitude $20^{\circ} 40' S.$; meridian distance, from the island of St. Paul, $23^{\circ} 45' E.$

(Signed)

“ J. M. Foss.”

N. B. The miles here mentioned are Danish or German, 15 to one degree.

These two accounts are the only materials I could find respecting that dangerous reef; the latter of which appears to be very satisfactory in point of latitude, and what I should think may be so far depended upon.—However, in passing either of these latitudes, great caution ought to be observed.

Cloats

Cloats Island Cloats Island, lying near the coast of New Holland, is very dangerous, on account of its situation being ill determined.—The only information I could get respecting it is as follows :

Ship House of Austria.

It was first discovered by the ship House of Austria, a Danish Indiaman, on the 23d of June, 1719.—A day or two *before* and *after* they made the island, saw much of what is called gulf-weed; also birds like a lapwing in shape and flight. They had no soundings when within two miles of the island, which lies in the direction of N. E. by N. and S. W. by S. At each extremity there run out breakers 2 or 3 miles.—It is low land, and cannot be seen far.—Made

Longitude from the Cape of Good Hope,	
on that day	92° 00' E.
Cape of Good Hope's longitude	18° 26'
Places the island in	110° 26' E. Gr.

They afterwards, in a short run of only seven days, made Bally, which bears, by their account, N. 27° E. from the said island.

Cloats Isl. according to the Haslingfield.

In the year 1743, the English Company's ship Haslingfield, Capt. Halden, made Cloats Island. It extends N. E. by E. and S. W. by W.; is low at both ends, with a small rise in the middle. There runs from off the N. E. end breakers a long way from the island.—Its latitude is 22° 8' S.; and

Long. from the Island of St. Paul	32° 17' E.
Longitude of St. Paul	77° 42'
Makes the longitude of the Island	109° 59' E. Gr.

They remark seeing the bird like a lapwing.—The very near agreement of these two accounts leads me to believe that the island is now placed tolerably near the truth, particularly in point of latitude, which, I think, can admit but of little doubt. I have adopted the English account from St. Paul's for the longitude, which is 27 miles less than the Danish account from

from the Cape of Good Hope; so that the land of New Holland, in the latitude of Cloats Island, lies $2^{\circ} 30'$ E. from it.—The variation of the needle, according to the Lord Holland, in 1780, who must have passed very close to it, was $4^{\circ} 50'$ westerly. I must here observe, that the magnetic variation is of but little use in determining your easting, as it only varies one degree from the meridian in 8 degrees of longitude; that is, from longitude 104° to 112° E. and in the parallel of latitude nearly 22° S.; so that no dependence can be put on it as a guide, all the compasses I ever saw being liable to err full more than that quantity.

The limits of this Chart, to the south-east, just takes in that part of the west coast of New Holland, which *ought* to be made, if bound through either of the eastern straits, viz. Bally, Lombok, Allas, or Sapy. The approach to the coast is not to be known by the *variation*, as must appear from what I before observed respecting its small decrease, although the English Directory (page 18, Nicholson's Remarks) positively cautions the strictest regard to be paid to it as a sure guide. The coast, as now placed, is nearly in its true longitude.—M. d'Apres' situation of it was nearly two degrees more to the westward than it really was; which Capt William Frazer, of the Earl of Mansfield, clearly proved by *chronometer*, corroborated by a series of 39 lunar observations, three nights in each, taken from the 1st of December to the 8th, and brought on by chronometer daily; wherein no one set throughout the whole ever differed but a few miles, either with respect to themselves, or from that deduced by chronometer, as will appear by the following account of them:

Coast of New
Holland.

		Chronometer		Lunar obs.	
1st	Sun & Moon W.	$113^{\circ} 24' 30''$	diff.	$114^{\circ} 52' 05''$	diff.
2d	Moon & Stars E.	$113^{\circ} 44' 48''$	$20' 18''$	$115^{\circ} 12' 42''$	$20' 17''$
3d	ditto	$114^{\circ} 00' 15''$	$11' 27''$	$115^{\circ} 24' 43''$	$12' 01''$
5th	ditto	$114^{\circ} 14' 00''$	$13' 45''$	$115^{\circ} 38' 11''$	$13' 28''$
6th	ditto	$113^{\circ} 47' 30''$	$26' 30''$	$115^{\circ} 15' 05''$	$23' 06''$
8th	ditto	$113^{\circ} 20' 15''$	$28' 43''$	$114^{\circ} 43' 48''$	$31' 17''$
		Chronometer Mean	$20' 49''$	Lunar Mean	$20' 06''$

Capt. Fra-
zer's obs. to
determine
New Hol-
land and Ban-
ditty Isl.

P

By

By the above corresponding observations, I have been enabled to lay down the longitude of the eastern part of this Chart, from the Straits of Lombock to the Cape of Good Hope on New Guinea. The intermediate points between those two places, along what is named the Pitt's Passage, are entirely placed from Capt. Frazer's chronometer, made by Arnold; whose uniformity of rate is so well confirmed by the lunar observations, there can be but little doubt of its determinations being much nearer the truth than any set of observations that have yet made their appearance.

Ship Pigot's
Account of
making New
Holland.

The English Company's ship Pigot, Capt. Morgan, in 1780, bound to China, by the Straits of Sapy, made the land in about latitude $22^{\circ} 50'$ S.; they had soundings 55 fathoms, white sand and black specks, at the distance of 6 or 7 leagues off shore.—Their latitude at noon of the same day was $22^{\circ} 40'$ S.; and the longitude by lunar observation 112° E from Greenwich, at that time about 8 or 10 leagues off shore.—No soundings. It therefore appears that the coast in latitude $22^{\circ} 40'$ S. is in longitude $112^{\circ} 26'$ E.

Ship Lord
Holland's
Account.

The Lord Holland, Capt. Williams, that same year made the coast of New Holland, about 1° more to the northward than the Pigot. They saw the land in the morning, at 5 A. M. bearing N. E. by E. distance about 7 leagues (I should rather suspect, at that time in the morning, and the land not being very high, that the estimated distance is by far too much); immediately founded, and had ground at 12 fathoms, fine sand and black specks.—Bore up to the northward, when they deepened to 15, 25, 30, 44, and at noon had 45 fathoms, light green ooze. The latitude observed $20^{\circ} 42'$ S. She carried soundings 17 miles more to the northward than the noon latitude, 50 fathoms, fine white sand. How much farther they extended she did not try.—Her last cast, 50 fathoms, was in latitude $20^{\circ} 25'$ S.

Lord Hol-
land's Ac-
count of the
N. W. Point
of New Hol-
land.

At 5, A. M. they saw the coast; at 7, saw the termination of the north-westernmost part of that great continent. It appeared very much like the Bill of Portland, the bill being to the northward and the bluff to the southward. Off the low point there were breakers run out a considerable way.—

way.—Judge their distance from the shore to be 6 miles.—Soundings at same time 13 fathoms, coarse brown sand and small stones.—The bluff part of the land N. 73° E. (I should rather think their distance not so much, from seeing the breakers so plain). By the above account and their noon latitude, the north-west point of New Holland lies in latitude $21^{\circ} 6'$ S.

I have inserted on the Chart this ship's track, soundings, and variation of the compass, to shew the parallel of latitude in which she made the coast. I have also carried on a continuation of it from the north-west point of New Holland, up to the south part of Sandle Wood Island, where she remained a considerable time, entangled with light variable winds. I have been enabled, from her observations, to place the south coast of that island in its true latitude and shape. It has also in a great measure confirmed the difference of meridians between the north-west point of New Holland and the west point of Sandle Wood Island *to be right*, as I placed it by the observations of Capt. Frazer's chronometer, when he was off the entrance of the Straits of Sapy. They found no soundings near this island, till off the west or bluff point, where they got ground, at the distance of 3 or 4 miles from the shore, 45, 35, 32, 30° , 35, 55, and 90 fathoms. At sun-set, on the 22d of November, the island of Sandle Wood bore from S. 78° E. to N. 52° W. distance 4 miles, when they had 68 and 56 fathoms water.

Sandle
Wood Isl.

Abstracts from Capt. Clements's Journal, on his voyage to China, 1780, say the north point of Shark's Bay lies, by observation of sun and moon, in longitude $112^{\circ} 57'$ E. from Greenwich; and in latitude 24° S. They had soundings at 100 fathoms, in the latitude of 25° S. 16 leagues from the coast of New Holland.—From thence steered to the northward. When in latitude 24° S. off Sandy Point, and to the northward of Rocky Island, had no ground with 120 fathoms of line, at the distance of 9 leagues from the shore.—This ship, in my opinion, made the land a great deal too far to the southward. The parallel of latitude I would recommend to make the coast in is $22^{\circ} 40'$ or $21^{\circ} 40'$ S.; *either of which* leads you perfectly clear of Cloats Island, likewise to a very safe part of the coast.

Ship Glatto's
Acc. of New
Holland.

What Lati-
tude to make
New Hol-
land in.

The

The variation will be $3^{\circ} 30'$ westerly, in sight of it; and the longitude as before mentioned in the Pigot's account of that part.

I cannot help in this place taking notice of errors or mistakes in the India Directory.—Page 18 of *Nicholson's Observations*, he remarks,

Ships bound
to the Straits
of Lombock.

“ A ship bound to these Straits should take their departure from New Holland in latitude $19^{\circ} 20'$ S. or thereabouts.”

In answer to this, it appears the west coast of New Holland does not extend farther north than $21^{\circ} 6'$ S.: an error of 46 miles in point of latitude.

In the next place, he advises making the coast of Sumbawa, “ to the eastward of the Straits of Allas;” without a single caution respecting the easterly or westerly monsoon; both of which in this place ought to be very particularly attended to, as the falling to leeward of your intended track will inevitably frustrate your intention; it being hardly ever possible to regain your situation to windward, although perhaps there is only a few miles wanting. I would therefore advise ships that intend going through these Straits, after taking their departure from New Holland, always to allow from 10 to 15 leagues to be to windward of their intended destination.

Remarks from the Straits of Lombock to the Straits of Sapy.

Of the Straits
of Lombock.

How to know
them.

Peaks of
Bally and
Lombock.

The Straits of Lombock are formed by the island of Bally to the west, and Lombock to the east. The south entrance of it is easily known, having the large island of Banditty lying in it. Another sure guide to distinguish it from the other Straits, when 7 or 8 leagues from shore, is the peaks of Bally and Lombock, which are both seen at the same time. when off the mouth of it.—Bally Peak is a single sharp-pointed mountain; when it bears N. by W. it is then exactly in the centre of the opening of the Straits. The Double Peak of Lombock at same time bears N. E. $\frac{1}{2}$ N. and is
seen

seen topping over the western high land of the island.—A particular view of the entrance of this Strait I have given in my former publication.

I have not hesitated in adopting as a standard for the longitude of the eastern part of this Chart Capt. William Frazer's correct series of astronomical observations, taken, as I before mentioned, from the 1st of December to the 8th; on which day they made the islands of Bally, Banditty, and Lombock. He places the island of Banditty, by a mean of 39 sets of the moon, brought on by chronometer, in longitude $115^{\circ} 31' E.$ from Greenwich; and its latitude $8^{\circ} 46' S.$ The shore from the Straits of Lombock to the Straits of Allas, is steep too, without any perceptible danger. A few leagues to the eastward of the south-west point of Lombock is a deep bay or inlet: off the west point of the said bay there are straggling rocks above water, 2 or 3 miles from shore; and no other danger whatever.

Long. of
Banditty
Island.

Descrip. of
the coast of
Lombock,

These Straits I have given a particular description and chart of in my former publication. I have only in this place to observe, that they lie about 14 leagues to the eastward of Banditty island; and that the south-west point of Sumbawa, which forms the east side of them, lies in latitude $8^{\circ} 49' S.$ and in longitude, from 40 sets of the moon, in $116^{\circ} 18' E.$

Straits of
Allas.

The island of Sumbawa extends from east to west 64 leagues, determined by Capt. Frazer's chronometer, it runs nearly in the parallel of latitude of $9^{\circ} S.$ The coast is all along *high double land*, except near the middle of it, where there is a low point with trees. A-breast of this point is the termination of the bay on the north part of the island, which almost cuts it in two. The south-east point of Sumbawa is in latitude $8^{\circ} 33' S.$ and longitude $119^{\circ} 30' E.$ There are a great many small rocky islands lying off it, which must be rounded in going into Sapy Bay.

Island of
Sumbawa.

The bearings of the Earl of Mansfield's anchoring-place in this bay stand as follows: Sintodo Point S. $54^{\circ} E.$; Mataccot Rock S. $72^{\circ} E.$; Booroo-boody Island S. $84^{\circ} E.$; the extremes of Galybantín from N. 70° to N. $89^{\circ} E.$; Sapy Bay, from S. $25^{\circ} W.$ to S. $11^{\circ} W.$; the north extremes of Sumbawa, N. $20^{\circ} W.$; a point of land on Sumbawa, round
Q which

Bearings of
the Earl
Mansfield in
Sapy Bay

which they watered, and where there is a small village, S. 50° W.; the Double Peaks of Gunongapie, in one, N. 2° E.: distance from the Sumbawa shore $2\frac{1}{2}$ miles: in 30 fathoms water; clear sandy bottom. Latitude of the ship at anchor $8^{\circ} 26'$ S. and longitude $119^{\circ} 27'$ E.—Found regular land and sea breezes; the southerly wind in the morning, and the northerly wind about two in the afternoon. The tide run only $2\frac{1}{2}$ knots where the ship lay; and flows, full and change, about 1 hour 30'.—A very particular view of the islands and south entrance of this straight is in my last publication.

Peak of
Gunongapie.

The island of Gunongapie lies off the north-east part of Sumbawa. On it there is a remarkable high double-peaked mountain, which may be seen full 20 leagues. The latitude of the peak is $8^{\circ} 5'$ S. and longitude, by chronometer, $119^{\circ} 26'$ E. from Greenwich.

Pitt's Passage

The Pitt's Passage has this material advantage, of being intirely laid down and projected on the spot, which I had an opportunity of doing, when on board the *Vanfittart*, in 1780, 81. Unfortunately, there was no time-keeper in the ship that voyage, which rendered it impossible for me at that period to ascertain the exact difference of meridians; so that I found the Chart was a little distorted in point of longitude; but which is now completely corrected by the determination of Capt. Frazer's chronometer, in the *Earl of Mansfield*, that same year. My latitudes of the islands agree with him exactly throughout. Therefore, to prevent repetition, it is to be understood, that the latitudes adopted in that Passage are a mean of *Capt. Frazer's* and *my own*. The difference of Meridians is entirely from *his Arnold's box-chronometer*.

Caution in
leaving the
Straits of
Sapy.

Tonin Isl.

In coming out of these Straits, great care ought to be taken to prevent being hoisted to the eastward. The *Mansfield*, with every possible caution, fell to leeward, and made the Tonin Islands, which lie to the southward of Salayer. They are woody and tolerably high: and are now placed on the Chart in their true latitude and situation from Gunongapie; that is, they are 88 miles to the eastward of it by chronometer. The old English Pilot makes the difference between them 124; which is an error of 36 miles.

The

The island Salayer is of moderate height;—its north point forms one side of the Straits of the same name; and lies in latitude $5^{\circ} 49'$ S. and longitude $120^{\circ} 46'$ E. from Greenwich; 80 miles east of Gonongapie by chronometer, and only 50 miles by the log. The old English Pilot Chart places it 126 miles E.—To the westward of Verkins, or Hog Island, near Salayer, there is a dangerous shoal, named Hotland's Rudfon. The Princess Augusta, in 1760, had near been upon it.—Their account is as follows:—At 3 in the morning saw the land bearing E. by N. to S. E.; hove to and founded; got ground, 28 fathoms; immediately anchored. In the morning, at day-light, found themselves within two cables length of the shoal, on some part of which they found only two fathoms, sharp rocks.—It runs north and south a cable's length, and east and west a quarter of a mile. From its shoalest part, the south end of Salayer is in one with Verkins, or Hog Island, bearing S. by E.; the north end of Salayer N. N. E.; distance from Hog Island 5 miles.

Account of
Salayer and
Hog Island.

Princess
Augusta's
Account of
the Shoal
near Salayer.

The Earl of Mansfield, Capt. Frazer, got upon this shoal; they saw the rocks under their bottom, and had $\frac{1}{4}$ less 4 fathoms; they immediately stood to the southward, and deepened to 5, 7, 10, and 15 fathoms; after that no ground. The remarkable little hill, like a haycock, at the bottom of Bonthian Bay, bore then N. $\frac{1}{2}$ E. I have placed the shoal on the Chart according to that ship's account.

Shoal to the
Southward of
Bonthian
Bay, Celebes

The Straits of Salayer are formed by the island of the same name, and the south-east point of Celebes to the north. Between these two points are three small islands, in general named *North*, *Middle*, and *South*. Middle Island is the smallest of the three, in latitude $5^{\circ} 39'$ S.; the Passage is of either side of it; that to the southward appears widest, and is esteemed by many the best: however, in my opinion there need be no preference given; both are equally safe.—In the *Vanfittart*, 1780, we went the northern passage, and saw no danger. The Earl of Mansfield, that same year, also passed that way.—The north end of Salayer at a distance appears like a small island, both when to the eastward and westward of it.

Straits of
Salayer.

In

In coming from the southward and westward, North Island, in those Straits, is not easily discovered, on account of the south-east point of Celebes projecting beyond it in that point of view.—When you get to the eastward of it, the passage opens and appears as wide as any of the others; but I believe not safe. Between South Island and Salayer there is a wide space, but no passage for a ship

The only danger hereabouts is the shoal before mentioned, upon which the Earl of Mansfield had $\frac{1}{2}$ less 4 fathoms. Great care ought to be taken to avoid it.

Postillion
Islands.

The easternmost of the Postillions is laid down from my own observation in the Vanfittart. They are low flat islands, and bear nearly due north from the Peak of Gunongapie. The north coast of Sumbawa and north entrance of Allas Straits is placed from the Lord North's journal, coming from China, 1782.—Her track is inserted from Salayer through these straits.

Track of the
Princess
Augusta.

I have laid down from an original journal the Princess Augusta's track going to China, in 1760; which will point out that ship's route and soundings from the island of Pody near Madura across the De Serres Bank, until she anchored off the Hotland's Rudson Shoal, near the island Salayer.

Course from
Middle Isl.
in Salayer
Straits, to the
south-east
Point of the
Isl. Bouton.

Long. of
Hegadis and
South Island.

The course to steer, after passing the Straits of Salayer is E. $\frac{1}{2}$ S. which will carry you, at a proper distance, clear of the island Canbyna, which is very high land. It lies 30 leagues to the eastward of Middle Island, by chronometer. The same course will bring you to pass South Island, in the entrance of Bouton Straits, and also the south-east point of Bouton, at the desired distance. Hegadis and South Islands bear of each other north and south, and are placed, by chronometer, in longitude $122^{\circ} 55'$ E. from Greenwich; the latitude of South Island is $5^{\circ} 46'$, and the south-east point of Bouton $5^{\circ} 48'$ S.; the longitude of ditto $123^{\circ} 13'$ E.

South

South Island, near Bouton, is not very distinguishable in coming from the westward; it appears as part of Bouton till it bears about north, when it begins to open and shew a passage between them.—In coming this track the Bouton shore is to be kept close on board, until past the islands and shoals of Token Bassias, which are very dangerous.—The track of the Earl of Mansfield, inserted on the Chart, will shew the best mode of proceeding. The coast and bays formed on the east side of Bouton seemed all perfectly clear; the shore is steep too, and the face of the country beautiful beyond description.

Among the first voyages this way, the passage by the Straits of Bouton was always preferred; however, of late they have been very properly neglected as a *difficult tedious navigation*; whereas on the outside the passage is much shorter and perfectly safe, by keeping as before desired (near the Bouton shore). The north point of Bouton lies in latitude $4^{\circ} 25' S.$ and longitude, by moon and chronometer, $123^{\circ} 29' E.$ from Greenwich.

Longitude of
Bouton,

Weywongy is a high island to the northward of Bouton. The body of it lies in latitude $4^{\circ} 3' S.$ and the south part of it forms the north entrance of Bouton Straits.

The Island of
Weywongy.

A few Remarks concerning the Pitt's Passage.

In stretching over from Weywongy to gain the passage between the Xullas and north part of Buro, the greatest care is absolutely necessary, in order to prevent falling to leeward; which has sometimes happened from inattention to the strong southerly currents, that at this season (December) run at the rate of from 20 to 25 miles per day. I would therefore advise every effort possible to gain nothing, after leaving Weywongy, so as to fetch Xullas Befly, whose south point lies in latitude $2^{\circ} 28' S.$ and longitude, by moon, $126^{\circ} 25' 30'' E.$ Between it and Buro the passage is about 14 or 15 leagues wide. The north-west point of Buro is in latitude $3^{\circ} 7' S.$ and longitude $126^{\circ} 15' E.$ The high land of this island, which appears like a doom may be seen 15 leagues.

Xulla Befly's
Lat. and
Long.

All through the Pitt's passage the land is to be seen on both sides. The best track to take, is to keep the small northern islands close on board all through, till you come in sight of Battanta and Salwatty; when you have the option of entering the Pacific Ocean by the Pitt's or Dampier's Straits.

From Xulla
Bessy to the
Island Go-
mono.

From the south point of Xulla Bessy the island Gomono bears N. 70° E. distance, by chronometer, 34 leagues. To prevent falling to leeward between these points, a N. E. by E. course ought to be steered; which will bring you in sight of the west end of Oby Major. The latitude of Gomono is $1^{\circ} 55'$ S. and longitude $128^{\circ} 2'$ E.

From Gomo-
no to Pulo
Pifang.

From Gomono to Pulo Pifang the course is E. N. E.; distance 26 leagues. Between them are several small islands, lying much in the same direction; all of which may be passed very close. There are no soundings in this track. Pulo Pifang is a small island with two hummocks upon it, lying in latitude $1^{\circ} 28'$ S. longitude $129^{\circ} 14'$ E.

From Pulo
Pifang to
Pulo Popa.

Pulo Pifang and Pulo Popa bear of each other N. 72° E. and S. 72° W. distant 17 leagues. Between them there is a cluster of small islands, by some named Boo, by others Esplie. They lie nearest to Popa, in nearly the same parallel of latitude; and, according to the Dutch chart procured by Captain Wilson of the Pitt, they are the only islands in this track which appear to have soundings near them, for the purpose of anchoring.

Pulo Popa.

The south part of Pulo Popa is in latitude $1^{\circ} 12'$ S. and longitude $130^{\circ} 11'$ E. from Greenwich, by moon and chronometer. There are a number of small islands which surround it on all sides. It has two remarkable hills on the western part, which may be seen a great way. The eastern part is a perfect flat. The mouth of the Pitt's Straits is due east of this island 20 leagues, and Cape Mabo, the eastern part of Battanta, bears N. 69° E. from it; distance about 14 leagues.

The

The west point of Popa and Myfole bear north and south of each other. At this place the Pitt's passage is the narrowest, being only 8 or 9 leagues wide between Popa and the Canary Islands, which are seven or eight in number, lying to the northward of Myfole; the largest of which (or Grand Canary) is in latitude $1^{\circ} 44'$ S. and longitude $129^{\circ} 54'$ E. by moon and chronometer. Captain Forest, on his voyage to the eastward, touched at this island, and found a good shelter; which he named Round Harbour. He also touched at Efbe, on the south coast of Myfole, in latitude $2^{\circ} 12'$ S.

Myfole and
Canary
Islands.

Being to the eastward of Pulo Popa, you immediately see the high land of Battanta and Salwatty. Between them is the Pitt's Straits, which I have in my former publication given a chart of upon a large scale, principally laid down from Captain Wilson's original Journal, with corrections, from observations made by the fleet, in 1780 and 1781. Upon the same plate is engraved a View of the west entrance of Pitt's and Dampier's Straits; also a Chart of Dampier's Straits, and a particular view of the lands around them. It is not pretended that either of these charts are perfectly correct; they will however inform the navigator of *every* danger and sounding we have yet had an opportunity of knowing respecting them.

The Pitt's Straits, by the Dutch named Sadgewein, are very narrow; the shores are steep; the tides remarkably rapid, attended with strong eddies, which render them at all times very dangerous, particularly if it should happen to fall calm.—The soundings are placed from cross bearings of the land, and will point out the only anchoring places we know of throughout this passage.

Of the Pitt's
Straits.

The Straits of Dampier are formed by the island of Battanta to the south, and Weyoogee on the north. They are so named from Captain Dampier, who was the first of our countrymen who visited these parts. Some of the Dutch maps call them Geme, others Gammen.—On my voyage to China, in the *Vanfittart*, 1780, 1781, I made a plan of them upon the spot; which was corrected and improved, before publication, by Captain Fraser's Series of Angles, taken at three different stations on shore;

Dampier
Straits.

shore; also cross bearings, taken in the ship at the same time; which rendered the visible points throughout all very correct. The tracks inserted are laid down from cross bearings of the points thus determined, as are also the soundings and shoals that were discovered by those ships. From Cape Mabo, the westernmost point of Battanta, to point Pigot, the south-easternmost part of Weyoogee, the distance is 23 leagues.—There are no soundings in this passage to the eastward of Foul Island, or any other danger whatever; so that I shall not hesitate in offering my opinion, that they are far preferable to the Pitt's Straits, for two reasons:—1st, That it has soundings throughout the narrow part of its navigation. 2d, That a ship is not so liable of being hampered in with the coast of New Guinea, when clear of them, as is the case with those who come by the Pitt's Straits.

Of the South
Sea or Pacific
Ocean.

By whatever passage or strait the Pacific Ocean is entered, the first grand point necessary is to gain sufficient easting, while in a low latitude, to enable you to weather the north coast of Luconia with the north-easterly wind.—The very great uncertainty and violence of the westerly currents, in this part of the Pacific Ocean, and the number of small half-drowned islands dispersed over it, render the navigation thereof extremely dangerous, and makes it hard to determine what the exact quantity of easting should be, as some ships have weathered Luconia with much less than others.

Vanfittart's
Voyage in
that Sea.

When I was in the Vanfittart, in 1781, we found it impossible to fetch any farther to the northward than the island Samar, although we had seen the Pelew Islands: however our case was a very extraordinary one. The ship's track upon the Chart will best describe our situation. We were obliged, from Samar, to stand again to the south-east, in order to get an offing; which greatly prolonged our passage, the length of which from England was nine calendar months *at sea*; viz. from our leaving Portsmouth, on the 4th of June, 1780, to our arrival at Maccoa in China, on the 4th of March, 1781. In that time we crossed the equatorial line twice, at the space of 160° 30' difference of longitude, or 9630 nautic miles to the eastward of the first crossing.

In

In my opinion, all ships coming from Pitt's, Dampier's, or Watson's Straits, ought to pass, if possible, to the eastward of the Pelew Islands.

Ships that come by the Macassar Straits and Sangay Passage, after leaving the north Cape of Moratay, should stand to the eastward sufficiently, to enable them to get sight of the southernmost of the Pelew Islands; which, in that case, they must pass to the westward.

The Pelew and other small islands, which are dispersed about that part of the Pacific Ocean, contained within the limits of this Chart, are now placed in their exact latitude and position, with respect to each other, from repeated satisfactory observations, which the ships track on the Chart will shew; but which I shall here explain more minutely.

Account of Islands in the South Sea, shewing by what Means their Situation was determined.

St. David's Islands are three small islands lying close together, seen by the ship Warwick, Feb. 1761; who places them, by a good observation, in latitude $1^{\circ} 10'$ S. and 84 miles east of the north part of New Guinea; which they had only lost sight of a day and a half.

St. David's
Islands.

The Free-Will Islands of Dampier were seen by Captain Mears, on his voyage to the north-west coast of America; who places them in latitude $56'$ N. and in longitude 137° E. from Greenwich.—The above account is what I have adopted.

The Free-
Will Isl.

Lord North Island was, I believe, first seen by that ship on her voyage returning from China, in 1781.—It was also seen by Captain Douglas, of the Nootka, bound to the north-west part of America, who calls it Johnstone's Island. He remarks, it is very low and small, being not more than a league in circumference. The latitude he allows it to lie in is $3^{\circ} 11'$ S.

Ld. North
Island.

Ship Noot-
ka's account
of it.

S

This

Duke of
Montrose's
Acc. of it.

This same island was lastly seen by the Duke of Montrose, on her passage to China, January, 1781, who named it Navil's Island, after the man who first discovered it. Mr. Robinson, chief mate, places it in latitude $3^{\circ} 6' S.$; which is my adopted position.

Pulo Ma-
riere.
Ponsborne's
Account of it

The small Island of Pulo Mariere was first discovered by the Carnarvon, Captain Hutchinson, September, 1761, returning from China.—It was next seen by the Ponsborne, Captain Payne, in February, 1769, going to China. It is, by his account, a low level island, about 3 or 4 miles in length, entirely covered with trees. His account places it in latitude $4^{\circ} 16' N.$

Duke of
Montrose's
Acc. of it

The Duke of Montrose also saw it.—By their account the latitude is $4^{\circ} 18' S.$ which agrees very well with Captain Payne; and they make it to bear nearly north-east and south-west from the island called Lord North. My adopted latitude is the mean of these two, $4^{\circ} 17' S.$

Pulo Anna.

The Island of Pulo Anna is the standard for the longitude of these small islands. It was seen by the Carnarvon, Warwick, and Princess Augusta, returning from China, in 1761; who all nearly agree in the latitude.

Princess
Augusta's
Acc. of it.

These ships fell in with this island at night.—The Carnarvon was within 200 yards of being on shore amongst the breakers. They describe it to be a small, low, woody island, lying in latitude, by observation, allowing for the variation of the sun's declination, $4^{\circ} 34' S.$ They remark that breakers run out from the south end of it two miles: they also take notice of the Carnarvon's seeing another island to the south-east, that same night, which was Pulo Mariere.

True Bri-
ton's Acc. of
it.

My adopted position of it is from the true True Briton's account, 1785, who describes it to be a low flat island, with breakers running out a mile from its north and south ends:—the latitude of its centre is $4^{\circ} 38'$, and longitude, by celestial observations, $130^{\circ} 23' E.$ from Greenwich. There came many canoes about the ship, with 5 or 6 men in each, none of whom would

would venture on board.—The above ship was sixteen days from this island to Formosa, and never was farther east than $131^{\circ} 20'$, after her departure from it.

The Ponsborne, in 1769, saw Pulo Anna. They place it, by good observation, in latitude $4^{\circ} 37'$; which exactly agrees with the True Briton's account. They make it to bear from Pulo Mariere N. W. $\frac{1}{4}$ W. 11 or 12 leagues.

Ponsborne's
Account of it.

The ship Governour, in 1763, made this same island. By their account the latitude is $4^{\circ} 35'$. They describe it to be foul for three leagues off the north and south ends: but that is not the case. The True Briton's account may be depended upon: she passed the south part at the distance of 3 miles.

Ship Governour's
Acc. of it.

The St. Andrew Islands bear from Pulo Anna about N. 40° W. They are two very small islands, lying north and south of each other. This account is from the Ponsborne's journal, in 1763, which places them in latitude $5^{\circ} 20'$ N.

The St.
Andrew
Islands.

The London, in January, 1784, saw the island St. Andrew; which they mistook for and named the Meeangis. Captain Easterbrook's account agrees with the Ponsborne's exactly, in point of latitude. It likewise agrees with my position, as placed by their bearing from Pulo Anna; which I consider as the only standard for the longitude of these dangerous islands. The London's account makes them to be $1^{\circ} 37'$ E. from the north cape of Moratay; which is nearly as they are now placed on the Chart

Ship London's
Account.

The islands named St. Johannes were seen by the Ponsborne, in 1769, and the Pocock, 17 . These ships agree in their latitude; viz. Ponsborne, $6^{\circ} 50'$, and Pocock, $6^{\circ} 47'$. They are two small islands, lying east and west of each other, at the distance of 4 or 5 leagues asunder. The westernmost bears from the St. Andrew Islands N. 28° E.—From the above account, I have placed them on the Chart.

Islands of St.
Johannes.

The

Pelew or
Peeloo
Islands.

The *Pelew*, *Palos*, or *Peeloo* Islands, are situated in the Pacific Ocean: they are a distinct range or chain of islands, extending 28 leagues in length N. N. E. and S. S. W. but in breadth very narrow: they are of moderate height, small in size, and in number almost innumerable: they have often been seen by the India Company's ships, going to China by the eastern passage. In the *Vanfittart*, 1781, I had an opportunity of exactly determining their southern extremity and eastern direction; we fell in with that side, and stood on to the N. N. W. thinking to weather them. After getting sight of the northern islands, the wind changed more northerly, which even prevented us from being able to weather the island we at first took to be the northernmost, but which we found was not so; therefore, judging it impracticable to get to windward, without a great loss of time, we wore and stood to the southward, coasting along the islands, at the distance of about 4 or 5 leagues from their east side; rounded the southernmost at the distance of 3 leagues; from which we took a departure, allowing the latitude, by a good meridian altitude, to be $6^{\circ} 56' N.$: the northernmost island I make to lie in $8^{\circ} 9' N.$ from estimated bearings, and distance two hours after the noon observation, which I was happy to find, on comparison, perfectly agreed with the remarks of those ships who passed to the northward of them, and who had every opportunity of settling their true latitude. As to the longitude of these islands I am not quite so certain; there is such a discordancy in all the accounts, that it is impossible for me to determine exactly. I have taken the mean of what appeared to me most satisfactory; which I believe is not very far from the truth. I had expected much satisfactory and authentic nautical information, respecting these islands, from *Wilson's account of them*, published by Mr. Keate; but in that I was sadly disappointed, there being not one useful remark, throughout the whole book, that could possibly be of the smallest utility to a seaman; and those that do appear, are all misrepresentations, of very dangerous consequences; which I will here endeavour to point out.

In the first instance, the chart (by Capt. Wilson) which accompanies the narrative, with the sole view of describing the exact situation and extent of the Pelew Islands is, in point of latitude of their southern extremes,

50 miles

50 miles more southerly than they really are :—an error which might prove of the most dangerous consequence to navigation.

Capt. Wilson, in his chart, places the southernmost part of these islands in latitude $6^{\circ} 5' N.$ The Princess Augusta, in 1761, places the southernmost of these islands, allowing for the variation of the sun's declination in $6^{\circ} 59' N.$ My own observation, in the Vansittart, 1781, in $6^{\circ} 55' N.$ The Duke of Montrose, 1789, passed within 2 miles of the southernmost island, which she makes to lie in latitude $6^{\circ} 56' N.$

After these three corresponding observations, I should think there can be no doubt of *Capt. Wilson's error* respecting the latitude of the southern extremes of these islands; which appears to me the more extraordinary as they were lost but 23 or 24 miles to the northward of the south part, on the island of Oroolong, in latitude $7^{\circ} 19' N.$ and longitude $134^{\circ} 40' E.$ from Greenwich. How that longitude was determined, is not specified.

The next thing which struck me, and which is the only piece of nautical information I could find, is *Mr. Keat's general idea of the islands*, Chapter XXIII. He says, "The Palos or Pelew Islands are a chain of small islands, situated between the 5th and 9th degree of north latitude, and between 130 and 136 degrees of east longitude from Greenwich. It would appear, by these wide limits, that those islands were extensive and straggling; which is by no means the case: they are, as I before mentioned, closely connected and distinct by themselves, occupying but a very small space; their extreme latitude is between $6^{\circ} 55'$ and $8^{\circ} 13' N.$; the width of them, in no place, appeared more than 10 or 15 miles, at most; the longitude of their center, by lunar observations, on board the London, 1783, is $133^{\circ} 30' E.$

The London, Capt. Easterbrook, on her next voyage, 1787, made the Pelew Islands a second time; they passed to the eastward and northward of the whole range, and made the north-easternmost island to lie in latitude $8^{\circ} 7' N.$, longitude $134^{\circ} 48' E.$ by observation; which agrees very nearly with his former voyage.

London's
observation.

T

Capt.

The Nootka's account of the Pelew Islands.

Capt. Douglas, of the Nootka, going to the N. W. coast of America, fell in with the north part of the Pelew Islands. His account places the two northernmost islands as follows: the easternmost one in $8^{\circ} 6' N.$ (which is the same with Capt. Easterbrook) and in longitude $134^{\circ} 6'$; the westernmost one, which is the northernmost of all, in $8^{\circ} 13' N.$, longitude $133^{\circ} 58' E.$; but no mention is made how that longitude is produced. Captain Douglas observed that breakers run out from those last mentioned islands full 3 or 4 leagues to the northward of them. Capt. Easterbrook also takes notice of breakers being to the northward, it therefore appears that the dangers bounding those islands to the northward extend up to $8^{\circ} 23'$ north latitude.

Capt. Wilson's account continued.

Captain Wilson's account says, that the whole west side of these islands is circled with a coral reef, which, in some places, extends 5 leagues from the shore, and in no parts that were visited, less than two or three. Having given every information I could find respecting the situation of these islands, I shall finish with a very singular remark, which, I am certain, will astonish every seaman, as a very unpardonable omission and neglect in Capt. Wilson's account of these islands, presented to the world by Mr. Keate. They have in no part of their narrative given the smallest information, or said one single word whether it was possible for a ship to anchor amongst, or near, any of those islands; so that *that* grand and important point, which to every seaman is of such immense consequence, still remains in the dark:—very much to the shame of those who, most certainly, had it in their power to determine.

Islands of Matelotas.

The Islands seen by the Company's ship Warwick, in 1761, going to China, which she names the Matelotas, are some of the westernmost of the New Carolinas: they passed to the eastward of them, and saw no other land. The Earl of Mansfield, in 1781, was nearly as far to the eastward, by *Chronometer*, and in the same latitude, but saw no land; I should therefore imagine there is no island between them and the north point of the Pelew Islands. Their latitude is determined by the Warwick's meridian altitudes; she was several days in sight of them.

The

The island of St. John is situated near the east coast of Magindanao. The Princess Augusta, in 1761, returning from China, made this island: the account, from her original journal, stands as follows: The 14th of September, at noon, the extremes of the island of St. John from S. W. $\frac{3}{4}$ S. to S. W. by W. $\frac{1}{4}$ W. distance 9 or 10 leagues; saw a small island lying to the northward of it, bearing W. by S. about 12 leagues. St. John is very high land, with a part low in the middle, like an opening, which is joined, as we suppose, by a low neck of land, making a bay. Its north end lies in latitude $8^{\circ} 21'$ N. and meridian distance home to the south point of the island Formosa, $6^{\circ} 4'$ W.

Island of St. John, by the Princess Augusta.

Description of St. John.

The Abregoes Shoal is a dangerous reef, lying in latitude $20^{\circ} 59'$ N.; longitude $136^{\circ} 38'$ E. It was seen, I believe, by Capt. Mears, on his passage returning from the north-west coast of America; at least, the above account is taken from his publication. I asked him afterwards about it. I think he acknowledged his having seen it.

Abregoes Shoal.

This finishes the description of those islands in the Pacific Ocean, contained within the limits of this Chart. I am sorry the information is not more satisfactory: I have only to say, it is the only account of these islands to be found in this or any other country; to attain which, it has cost me much time and trouble.

The Banda Sea, and the islands situated therein, are intirely laid down from that correct Dutch M. S. chart, procured by Capt. Wilson of the *Pitt*, on his voyage to China by the eastern passage in 1759; of which I have a copy.

Banda Sea and Islands.

The Arrow Islands are also placed from that chart, according to their bearings and distance from the islands *Cerem* and *Mysole*, which I took as a standard for the longitude, observing the Dutch chart's exact position; which, I have the pleasure to say, is very correct wherever I had an opportunity of proving it. By the above determination, I made the south part of the Arrow Islands to lie in $7^{\circ} 6'$, and longitude $135^{\circ} 18'$ E. from Greenwich.

Arrow Islands.

Capt Cook's
account of
them.

Capt. Cook,
from Arrow
Islands to
Timor. Sept.
6, 1770.

Timor Laut.

Latitude and
Longitude of
it.

Description
of Timor.
Wednesday,
12th.

Greenwich. After the Chart was engraved, I found that Lieutenant Cook, on his first voyage round the world, 1770, had seen these islands. His account of them stands as follows: Hawkesworth's Voyage, vol. 3. chap. 8, says, "These islands are laid down much too far from New Guinea: I found the south part of them to lie in latitude $7^{\circ} 6' S.$, longitude $225^{\circ} W.$ which is $135^{\circ} E.$ from Greenwich. [As this account and my projection agreed so very near, I did not think it at all necessary to alter my position] We continued to steer W. S. W. at the rate of 4 miles and a half per hour till ten P. M. when we had 42 fathoms; at eleven we had 37 fathoms; at twelve 45; at one, in the morning, 49; and at three, 120; after which we had no ground; at day-light, saw land; at noon, it bore from N. to W.; distance 5 or 6 leagues; it appeared to be level, and of moderate height; by the latitude, it should be *Timor Laut*; we founded, but had no ground with 50 fathoms: being not exactly sure what land this was, steered S. W. and by four P. M. lost sight of the island; which I was now sure no part of it lay to the southward of $8^{\circ} 15' S.$ Kept steering from W. S. W. to W. from Friday the 7th of September to Monday the 10th, at noon, when the latitude was $10^{\circ} 1' S.$; our longitude, by observation, $233^{\circ} 27' W.$ or $126^{\circ} 33' E.$ when we clearly saw the island of Timor. We were now well assured that as this land was Timor, the last island we passed was Timor Laut, or Laoet: the south part of it lies in latitude $8^{\circ} 15' S.$; longitude $228^{\circ} 10' W.$ or $131^{\circ} 50' E.$ which is exactly the longitude as taken from the Dutch M. S. chart. The latitude of that chart was not so exact. I have now placed it according to the above account.

Cook observes that, in charts, the south point of this island is laid down in various latitudes, from $8^{\circ} 30'$ to $9^{\circ} 30'$.—It is indeed possible, says he, that the land we saw might be some other island; but the presumption to the contrary is very strong; for if *Timor Laut* had lain where it is placed in the charts, we must have seen it there.

At noon, our latitude, by observation, was $9^{\circ} 36' S.$ This day we saw smoke; the land appeared very high, rising in gradual slopes one above another; the hills, in general, were covered with thick woods, some few places only cleared, as if by art. At 5 in the afternoon we were within a mile and a half of the shore, in 16 fathoms, a-breast of a small inlet into

into the low land, which lies in latitude $9^{\circ} 34'$ S. The land here answered well Dampier's description of it: close to the beach it was covered with high spiry trees, which he mentions having the appearance of pines. The flat land at the beach appeared, in some places, to extend inland two or three miles before the rise of the first hill. In this place, however, we saw no plantations or houses, but great fertility. We continued our course, with little variation, till Sunday, the 16th; when we saw the island called *Rotte*; and at noon *Semao*, lying off the south end of Timor, bore N. W.

Dampier, who has given a large description of the island Timor, says, that it lies nearly N. E. and S. W. seventy leagues long, and sixteen broad.— I found, says Cook, the east side to lie nearest N. E. by E. and S. W. by W.; and the south end to be in latitude $10^{\circ} 23'$ S., longitude $124^{\circ} 55'$ E. (which is the longitude I have adopted in the Chart). We ran about 45 leagues along the east side, and found the navigation altogether free from danger. The coast all along is intersected with salt creeks. In the afternoon, being within a small distance of the north end of *Rotte*, we hauled up N. N. W. in order to go between it and *Semau* or *Semao*; after steering three leagues upon this course, we edged away N. W. and W.; and by 6 P. M. we were clear of all the islands. At this time the south end of *Semao*, which lies in latitude $10^{\circ} 15'$ S. bore N. E. four leagues, and the island of *Rotte* extended as far to the southward as 136° W. The north end of this island and the south end of Timor lie N. $\frac{1}{2}$ E. and S. $\frac{1}{2}$ W.; and are about 3 or 4 leagues distant from each other. At the west end of the passage between *Rotto* and *Semau* are two small islands, one of which lies near the *Rotto* shore, and the other off the S. W. point of *Semau*. There is a good channel between them, about six miles broad, through which we passed. The island of *Rotta* has not so lofty and mountainous an appearance as Timor: though it is agreeably diversified by hill and valley on the north side, there are many sandy beaches. The appearance of *Semao* was nearly the same with that of Timor, but not quite so high. This finishes Capt. Cook's observations from the Arrow Islands through the Straits of *Semao*. I have only now to give his account of the island of *Savu*; which will intirely end my description of the materials that compose this Chart.

Sunday, 16th

Latitude and
longitude of
Timor.

Islands *Rotto*
and *Semao*.

From Straits
of Semaio to
the Island
Savu.

Being clear of the straits and all the islands that are laid down in the maps we had on board, between Timor and Java, we steered a west course till 6 o'clock next morning, when we unexpectedly saw an island, bearing W. S. W. At first, I thought we had made a new discovery; we steered directly for it, and by ten, were close in with the north side of it; where we saw houses, cocoa-nut trees, and, to our very agreeable surprise, numerous flocks of sheep. Sent the pinnace on shore, with an officer, who got intimation, that there was a town and harbour to the north-west part of the island, where the ship might anchor. Stood for the Bay, and at seven P. M. came to an anchor, at about the distance of a mile from the shore, in 38 fathoms water, clear sandy bottom. The north point of the Bay N. 30° E.; distance 2 miles and a half; and the south point, or westernmost end of the island, bore S. 63' W. Dutch colours were hoisted in the town, and three guns fired.

“ The refreshments which we procured here consisted of buffaloes, sheep, hogs, fowls, a few limes, and cocoa-nuts, and several hundred gallons of palm-syrup. Most of the buffaloes that we bought were sold for a musquet a piece.

Cook's
Description
of the Island
Savu.

“ This island is called by the natives *Savu*: the middle of it lies in about the latitude 10° 35' S., longitude 237° 30' W. or 122° 30' E. from Greenwich: it is about eight leagues long from east to west; but what its breadth is I do not know, as I saw only the north side. The harbour, in which we lay, is called *Seba*, from the district in which it lies; it is on the north-west side of the island, and well sheltered from the south-west monsoon, but it lies open to the north-west. We were told that there were two other bays where ships might anchor; that the best, called *Timo*, was on the south-west side of the S. E. point: of the third, we learned neither the name or situation. The sea-coast in general is low; but in the middle of the island there are hills of a considerable height.

“ The tame animals are buffaloes, sheep, goats, hogs, fowls, pigeons, horses, asses, dogs, and cats. Of all these there is a great plenty.

Of

Of the fish which the sea produces here, we know but little. Turtles are sometimes found upon the coast, and are by these people, as well as all others, considered as a dainty."

[Capt. Cook, in this description, is certainly wrong. It is well known that all over the East, turtle is never eaten by the inhabitants; being against the religion of the *Indians* and *Malays*; and, what is more surprizing, it is the only thing, upon the face of the earth, that the Chinese will not eat.]

"The people of Sebu are rather under than over the middle size; the women, especially, are remarkably short and squat built; their complexion is dark brown; hair black and lank. The dress of both sexes is blue cotton cloth, manufactured by themselves: they are very fond of finery, and wear many ornaments. The food of these people consists of every tame animal in the country; of which the hog holds the first place in their estimation, and the horse the second; they prefer dogs and cats (like the Chinese) to sheep and goats, and are not fond of fish. The common method of dressing their food is by boiling. Fire-wood is very scarce; and they have no other fuel."

"The information they received concerning the neighbouring islands at this place, is to the following effect:—

The small island to the westward of Savu produces nothing of any consequence but Areca nuts.

Timor is the chief; and the Dutch residents on all the other islands, go thither once a year to pass their accounts: the Dutch have there a fort and storehouses; but the Portuguese are still in possession of several towns on the north side of the island, particularly Laphao and Sefial.

Rotte is in much the same situation as Savu. A Dutch factor resides upon it, to manage the natives and look after its produce; which consists, among other articles, of sugar.

The Solor Islands are also under the influence of the Dutch settlement
at

at Concordia: they are flat and low, but abound with provisions of every kind; and the middlemost is said to have a good harbour for shipping.

Ende, another island to the westward of the Solars, is still in the hands of the Portuguese; who have a good town and harbour on the north-east corner of it, called Larantuca or Larntuca. They had formerly a harbour on the south part of it; but it has for some time been altogether neglected.

Cook's De-
parture from
Savu for
Java Head.

Friday, September 21st, 1770, in the morning we got under sail and stood to the westward, along the N. side of the island Savu, and of the smaller ones that lie to the westward of it; which, at noon, bore from us S. S. E., distant two leagues. At four o'clock in the afternoon, we discovered a small island (which I have named *New Island*) bearing S. S. W. distance three leagues, which has no place in any chart now extant: it lies in latitude $10^{\circ} 47'$ S., longitude $238^{\circ} 28'$ W. or $121^{\circ} 32'$ E. from Greenwich.—Nothing material occurred in their passage from this island to Java Head: they run down their westing in about the latitude of 10° S.; and made Java Head (the westernmost part of Java) on the first of October; having, during their passage from Savu, allowed twenty minutes a day for the westerly current; which, I concluded (says Cook) must run strong at this season, especially off the coast of Java; and I found that this allowance was just equivalent to the effect of the current upon the ship. On the eighth, they arrived in Batavia Roads—which finishes my REMARKS and MEMOIR; wherein I hope I have omitted nothing that an attentive *seaman* would desire in a work of this nature, or have inserted any thing that such a one would wish to expunge.

Had former writers on Geography taken this method, we had not had such mistaken notions of distant countries; and this Treatise would have been less necessary.—Time may, possibly, bring to light more exact and particular accounts of these islands and coasts: but, for the present, these descriptions are the only succinct and authentic to be found in this or any other country.

A TABLE

The following TABLE of LATITUDES and LONGITUDES is the Basis on which the Chart is formed. It is also intended to answer the Purpose of an Index to the Memoir.

The Figures standing before the Name of the Place, is the Page of the Memoir where that Place is described.

(*) signifies that the Latitudes and Longitudes, are described from what Authority obtained in my last Publication.

A.D. From Observations of Alexander Dalrymple, Esq.

(†) Observations of Captains Huddart, Hodgson, and Wilfon, seemingly well determined.

The Longitudes are reckoned from the Royal Observatory, Greenwich

Page.	Places.	Latitude.			Longitude. E.		
		D.	M.	S.	D.	M.	S.
9	Auro Pulo, near China Sea	-	2	30	N	104	38
10	Anamba Great, ditto	-	3	2	N	105	50
10	Anamba North-west, ditto	-	3	15	N		
10	Anamba Northernmost, ditto	-	3	55	N	106	3
11	Andrade Rock, ditto	-	9	54	N	109	54
	Arrayas Island, Borneo, south part	-	5	00	S	115	36
66	Anna Pulo, Pacific Ocean	-	4	38	N	130	23
71	Abregoes Shoal, ditto	-	20	59	N	136	38
71	Arrow Islands, south part, near New Guinea	-	7	6	S	135	
10	Blanco Pedro, Str. Malacca	-	1	20	N	104	22
12	Blanco Pedro, Coast of China	-	22	20	N	115	8
32	Bolinao Cape, Island Luconia	-	16	18	N	120	12
	A.D. Banguay Peak, Island Banguay	-	7	18	N	117	17 30
	A.D. Balabac Peak, Island Balabac	-	7	57	N	117	15 30
32	Botel Tobago Xima, near Formosa	-	22	6	N	121	42
34	Banca North point, Island Banca	-	1	28	S	105	48
	*Borneo, westernmost part,	-	1	23	N	109	18
	Batavia City, Island Java, Jup. sat	-	6	9	S	106	51 15
	†Boca Tigris, China River	-	22	48	3 N		
35	Brother Island, northernmost, near Straits of Sunda	-	5	9	S	106	4
35	Ditto, southernmost, ditto	-	5	11	S		
35	Bantam Point, Java	-	5	54	S	105	58
41	Bird or Blanc Island, Carimata Passage	-	3	40	S		
42	Bumpkin Island, Coast of Java	-	5	52	S		
	X					43	Two

Page.	Places.	Latitude. D. M. S.		Longitude. E. D. M. S.
43	Two Brothers, near Pulo Laut -	4 24	S	
	Banda <i>Great Island</i> , Banda Sea -	4 30	S	130 38
57	Banditta <i>Island</i> , near Bally -	8 46	S	115 31
61	Bouton <i>Island</i> , south-east point, Pitt's Passage -	5 48	S	123 13
61	Ditto, north end, ditto -	4 25	S	123 29
61	Bouro, north-west point, ditto -	3 6	S	126 21
	†Bonoa <i>Island</i> , ditto -	2 53	S	
	†Baby <i>Pulo</i> , near Straits of Sunda -	5 48	S	
2	Canton <i>City</i> , China -	23 6	55 N	113 13
8	Condore <i>Pulo</i> , China Sea -	8 40	N	106 18
23	Capone <i>Point</i> , Island Luconia A.D. Cagyan Sooloo <i>Island</i> , Mindoro Sea -	6 57	N	120 13 40
35	Crockatoa <i>Peak</i> , Straits of Sunda -	6 9	S	105 22
41	Carimata <i>Island</i> , north point, C. of Borneo -	1 33	S	108 50
42	Carrimon, <i>Java Island</i> , Borneo Sea -	5 50	S	110 32
52	Cloats <i>Island</i> , by the English, near New Holland -	22 8	S	110
52	Ditto, Danish account, ditto -	22 0	S	110 26
	Celebes, north-east point, Island Celebes -	1 50	N	125 22
	†Cambuys <i>Island</i> , near Batavia -	5 49	S	
	Christmas <i>Island</i> , Indian Ocean -	10 34	S	105 33
	*Docan <i>Pulo</i> , near Banca -	1 4	S	
	†Danes <i>Island</i> landing-place, China River -	23 6	N	113 29
	*Direction <i>Island</i> , Coast of Borneo -	12	N	108 30
47	Donda <i>Point</i> , Celebes -	48	N	120 39
46	Dwaalder <i>Island</i> , south C. Borneo -	4 11	S	
34	Doogers <i>Banks</i> , near Pulo Panjang -	39	N	105 28
43	Edam <i>Island</i> , near Batavia -	5 56	S	
63	Ef be <i>Harbour</i> , Island Mysole -	2 12	S	
32	Formosa <i>Island</i> S. point, Coast of China -	22 6	N	121 10
65	Free-Will <i>Islands</i> , Pacific Ocean -	56	N	137
15	A.D. Goat <i>Island</i> , near Luconia -	13 55	N	120 2
	*Gasper <i>Island Peak</i> , near Banca -	2 27	S	107 4
	†Ditto ditto -	2 25	35 S	107 5 15
48	Gillolo N. Point, Mollucca Passage -	2 20	N	128 10
			58	Gunongapic

LATITUDES AND LONGITUDES. 79

Page.	Places.	Latitude. D. M. S.		Longitude. E. D. M. S.
58	Gunongapie Peak, Straits Sapy	8 5	S	119 26
62	Gomona Island, Pitt's Passage	1 55	S	128 2
	Good-Hope-Cape, New Guinea	11	S	133 6
	*Haycock Island, C. of Borneo	2 14	N	109 15
	*Holy Spirits, easternmost, ditto	1 3	N	107 57
47	Haycock or Cone, near Sanguay	4 16	N	
35	Hounts or Hog Islands, Str. Sunda	5 52	S	
60	Hegadis Island, near Bouton			122 55
36	Java Head, Java, west end	6 48	S	105 9
	Java, South-east end, ditto	8 39	S	114 40
63	Kanary Island, Pitt's Passage	1 44	S	129 54
47	Kanneeoongan Point, Macassar Str.	1 14	N	119 50
	A.D. Keeney Balloo, Borneo	26 2	N	116 42 30
4	Ladrone Grand, Coast of China	22 57	N	113 41
11	Lema Grand, ditto	22 3	N	114 14
12	Lincoln Shoal, China Sea	16 29	N	113 10
12	Shoals to eastward of the Lincoln Shoal, China Sea	17 7 16 48	} N	112 47
	*Lingin Island, east point	21	S	104 48
	†Linting, China River	22 24 30	N	
35	Lucepara Island, Straits Banca	3 12 20	S	106 6
41	Lubeck, Borneo Sea	5 49	S	112 40
46	Little Laut Islands, northernmost, near Borneo	4 37	S	
	Ditto ditto, southernmost, ditto	4 54	S	
	Laut Great Pulo, south point	4	S	117 24
	Ditto N. E. point	3 20	S	
65	Lord North Island, Pacific Ocean	3 7	N	
3	Maccoa Town, China	22 12	N	113 30
4	Macclesfield Bank, eastern edge, China Sea			114 51
5	Ditto, extreme latitude from to	15 17 16 10	} N	
11	Middleburg Shoal, China Sea	9 3	N	108 57
	Manilla, Jupiter's sat. Island Luconia	14 36	N	120 53
	A.D. Mongalloom, Coast Borneo	6 10	N	115 37 30
34	Monopin Hill, Island Banca	2 2	S	105 6
41	Moncap Pulo, C. of Borneo	3 3	S	
	Motir Island, Molluccas	30	N	
44	Maragolang Islands, Str. Macassar	3 37	S	

46 Morefiles,

Page.	Places.	Latitude. D. M. S.	Longitude. E. D. M. S.
46	Moreffes, near south point Borneo	4 23 S	
59	Middle <i>Island</i> , Salayer Straits	5 39 S	120 48
	*Mabo <i>Cape</i> , Island Battanta	5 57 S	130 49
	Maccafar, Island Celebes, Jup. fat.	5 9 S	119 48 45
63	Myfole <i>Island</i> , Pitt's Passage	1 54 S	129 55 30
66	Marrier <i>Island</i> , Pacific Ocean	4 17 N	
	Matelotas <i>Islands</i> , ditto	8 35 N	
33	Natuna, northernmost, China Sea	4 51 S	107 52
	*Natuna <i>Grand</i> , ditto	4 12 S	108 14
		3 58 S	108
	*Natuna, southernmost, ditto	3 3 S	109 9
	*Ditto, East <i>Island</i> , ditto	2 42 S	109 41
	*Ditto West <i>Island</i> , ditto	2 44 S	108 54
	*Ditto, southernmost, called <i>Sapata</i> , ditto	2 28 S	109 14
	†Nanka <i>Islands</i> , Straits of Banca	2 30 S	105 41
76	New <i>Island</i> , near Savu	10 47 S	121 32
48	North <i>Cape</i> , Island Moratay, Pacific Ocean	2 38 N	122 50
54	New Holland, N. W. point, Indian Sea	21 6 S	113 10
54	New Holland, in latitude	22 40 S	112 26
31	Praters Shoal, N. E. point, China Sea	20 52 N	116 47
	Ditto N. W. point, ditto	20 52	116 34
	Ditto, south-east point, ditto	20 38	116 46
	Ditto, south-west point, ditto	20 39	116 35
	Ditto <i>Island</i> , ditto	20 47	116 37
	*Peak'd <i>Island</i> , Coast of Borneo	1 4 S	109 9
	*Purling or St. Barb <i>Island</i> , ditto	0 4 N	107 36
62	Pifang <i>Pulo</i> , Pitt's Passage	1 28 S	129 14
62	Popa <i>Pulo</i> , south point, ditto	1 12 S	130 11
46	Pater Nosters, northernmost, Str. Maccafar	2 N	
46	Ditto, southernmost, ditto	2 50 S	
	†Paffier, Borneo	1 50 S	
68	Pelew or Peeloo <i>Islands</i> northernmost, Pacific Ocean	8 13 N	133 45
	Pelew <i>Islands</i> , S. point, northernmost	6 55 N	133 20
45	Ragged <i>Point</i> , east C. of Borneo	2 35 S	117 41 40
47	Rivers <i>Cape</i> , N. Coast of Celebes	1 15 N	121 23
73	Rotto <i>Island</i> , S. point, near Timor		

6 Sapata

LATITUDES AND LONGITUDES. 81

Page.	Places.	Latitudes			Longitude. E.		
		D.	M.	S.	D.	M.	S.
6	Sapata <i>Pulo</i> , China Sea -	10	1	30 N	108	55	
12	Scarborough <i>Shoal</i> , ditto -	14 58 15 30		} N	116	45	
	A.D. <i>Sooloo</i> Temontangis, Archipelago	5	57	N	120	53	30
	A.D. <i>Sooloo</i> , Tulyan -	5	57	N	121	14	30
49	Soloan <i>Island</i> , near Sama -	10	49	N			
	*Seven <i>Islands</i> , near Banka {	1 10 1 26		} S	105	8	
	Sanga Boola <i>Bay</i> , Island of Banca	1	43	44 S	105	21	
	*Shoal Water <i>Island</i> , to southward of						
	Billitore -	3	22	30 S	107	12	
	†Ditto, ditto -	3	20	30 S	107	13	15
	*St. Pierre west cape of Borneo	2	14	S	109	15	
	†St. Michael's <i>Shoals and Islands</i> ,						
	Mindoro Sea -	7	37	S	118	31	
	†Sumatra, south point, Str. Banca	2	59	40 S	105	56	
41	Souroutou N. part, Carimata Passage	1	38	S	108	43	
41	St. Clement's <i>Bank</i> , ditto -	3		S			
42	Salomba <i>Great</i> , Borneo Sea -	5	28	S	114	29	
42	Solomba <i>Little</i> , ditto -	5	12	S	114	24	
46	Salatan <i>Point</i> , south C. of Borneo	4	9	S	115	42	
47	Seven <i>Islands</i> , Straits of Macassar	30		N			
47	Sanguay or Sangir <i>Islands</i> , N. point,						
	Sooloo Sea -	3	48	N	125	27	
73	Semao <i>Island</i> , S. point, near Timor	10	15	S			
48	Siao <i>Island</i> , S. point, Sooloo Sea	2	35	N	125	31	
57	Sumbawa <i>Island</i> , S.W. end, Indian Sea	8	49	S	116	18	
57	Ditto S. E. end, ditto -	8	33	S	119	30	
59	Salayer <i>Island</i> , north point, Straits of						
	Salayer -	5	49	S	120	46	
	St. John's <i>Island</i> , north end, near						
	Magindanao -	8	21	N			
74	Savu <i>Island</i> , Middle, between Timor						
	and Sandlewood Island	10	35	S	122	30	
61	South <i>Island</i> , Straits of Bouton	5	46	S	122	55	
47	Salibobo <i>Islands</i> , Sooloo Sea -	3	48	N	126	33	
65	St. David's <i>Islands</i> , Pacific Ocean	1	10	N	134	30	
67	St. Johannes <i>Islands</i> , ditto -	6	48	N			
55	Sandlewood <i>Island</i> , south part, near						
	Straits of Sapy -	10	22	S			
	Ditto, the westernmost, or Bluff						
	<i>Point</i> of, ditto -	9	42	S	119	15	
10	Timoan <i>Island</i> , north point, China Sea	3		N	104	16	
13	Tinchoza <i>Island</i> , C. of Haynan	18	43	N	110	36	
	Y						
							*Taya

Page.	Places.	Latitude.			Longitude. E.		
		D.	M.	S.	D.	M.	S.
	*Taya <i>Island</i> , near Banca		45				S
	*Toty <i>Pulo</i> , ditto		58		105	34	S
	*Table <i>Island</i> , west C. of Borneo		50		109	9	N
	*Ditto, the Southernmost island, near it		44		108	54	N
48	Ternate, Principal Mollucca		54		127	32	N
48	Tidore, ditto		43		127	37	N
51	Tryal <i>Rocks</i> , Danish acct. Indian Sea	20	40		}	120	50
51	Ditto, Dutch acct. ditto	19	30				
58	Tonyn's <i>Islands</i> , southernmost near Salayer	6	47			120	50
72	Timor Laut, S. point, Banda Seat	8	15			131	50
73	Timor <i>Island</i> , S. point, eastern part of India Sea	10	23			124	55
32	Vele Rete <i>Rock</i> , near Formosa	21	45		N	121	8
33	Vanfittart's <i>Rock</i> , near Banca	2	11	24	S	106	44
33	Vanfittart's <i>Wreck</i> , Island near Banca	2	9	6	S	106	19
	†Wampoa <i>Town</i> , China	23	5	45	N		
	†South Watcher, near Batavia	5	41	45	S	106	42 45
	*North Watcher, near Straits of Sunda	5	12	30	S	106	27
61	Weywongy, <i>Body of</i> , Pitt's Passage	4	3		S		
37	Wine Coopers <i>Point</i> , Island Java	7	28		S	106	32
61	Xulla <i>Betty</i> S. point, Pitt's Passage	2	28		S	126	25 30
48	Yowl <i>Island</i> , near Weyoogee	{ 50 } 22			} N		

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A photograph of a part of the Clarendon and Oxford

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1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them. The list includes names such as "J. H. Smith", "W. J. Jones", and "A. B. Brown", among others. The addresses are also written in cursive and include street names and city names.

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